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(54) MASSAGING APPARATUS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a massaging apparatus which can conveniently realize an optimum massage to an individual person by a simple constitution.

SOLUTION: A vibration detecting sensor 86a, and the like, are provided, and by detecting vibration generated by vibration of a therapeutic element 18 or a driving source 24, seating, leaving a seat and sitting on the seat of a massaging apparatus (relaxation device), a bodily shape, an appropriate therapeutic strength and a site where therapeutic treatment is required of a user are detected, and by using them, an appropriate therapeutic mode is selected and automatic finishing of therapeutic actions is controlled.
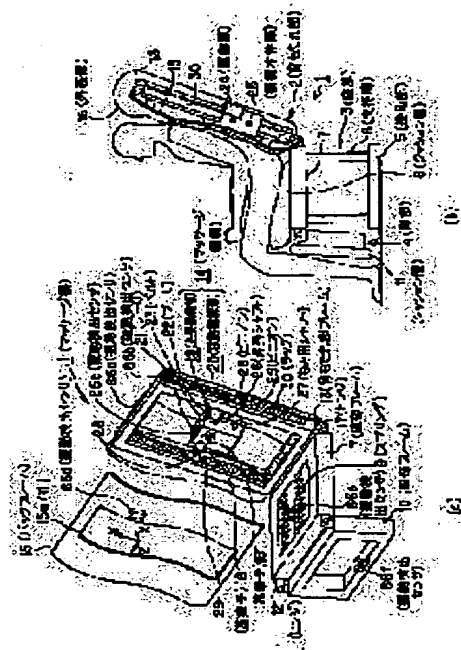
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CLAIMS

[Claim(s)]

[Claim 1] the free medical treatment which gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— the detection result obtained by oscillating detection means detect vibration, and said oscillating detection means, in the massage machine equipped with a control means —— being based —— free medical treatment —— the free medical treatment which sets up conditions —— a conditioning means —— having —— said free medical treatment —— a control means —— said free medical treatment —— the free medical treatment set up by the conditioning means —— the massage machine which characterizes by to control based on conditions.

[Claim 2] In the massage machine equipped with the control means the free medical treatment which gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— It has a state estimation means. the detection result obtained by oscillating detection means to detect vibration, and said oscillating detection means —— being based —— the contact to said user and said massage machine, or alienation —— the contact/alienation which presumes a condition —— said free medical treatment —— the presumed result according [a control means] to said presumed means —— being based —— said free medical treatment —— the massage machine characterized by controlling a means.

[Claim 3] Vibration detected by said oscillating detection means is a massage machine according to claim 2 characterized by being vibration produced by the contact or alienation of a user to a massage machine.

[Claim 4] vibration detected by said oscillating detection means —— said free medical treatment —— the massage machine according to claim 2 characterized by being vibration based on vibration of a means.

[Claim 5] said free medical treatment —— the free medical treatment which drives a means —— a means driving source —— this —— free medical treatment —— from a means driving source —— this —— free medical treatment —— vibration which is equipped with the driving force means of communication which transmits driving force to a means, and is detected by said oscillating detection means —— said free medical treatment —— the massage machine according to claim 2 characterized by being vibration based on one of vibration at least of a means driving source and a driving force means of communication.

[Claim 6] the free medical treatment which gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the detection result obtained by oscillating detection means detect vibration, and said oscillating detection means, in the massage machine equipped with the control means -- being based -- free medical treatment -- the free medical treatment which sets up reinforcement -- the massage machine characterized by to have an on-the-strength setting means.

[Claim 7] said oscillating detection means -- said free medical treatment -- the massage machine according to claim 6 characterized by detecting the vibration based on vibration of a means.

[Claim 8] the detection result obtained by said oscillating detection means -- being based -- said free medical treatment of a user -- a contact pressure presumption means to presume change of the contact pressure to a means -- having -- said free medical treatment -- the presumed result from which an on-the-strength setting means is acquired by said contact pressure presumption means -- being based -- free medical treatment -- the massage machine according to claim 7 characterized by setting up reinforcement.

[Claim 9] a said contact pressure presumption sake -- free medical treatment -- while changing reinforcement -- free medical treatment -- the massage machine according to claim 8 characterized by having the search mode which drives a child.

[Claim 10] the free medical treatment to a user -- in order to change a part -- said free medical treatment -- the free medical treatment to which a means is moved -- a means migration means -- having -- said free medical treatment -- the massage machine according to claim 9 which is in a child's predetermined successive range and is characterized by performing search mode continuously.

[Claim 11] the free medical treatment to a user -- in order to change a part -- said free medical treatment -- the free medical treatment to which a means is moved -- a means migration means -- having -- said free medical treatment -- the massage machine according to claim 9 characterized by performing search mode by two or more [in a child's successive range].

[Claim 12] The activation part of said search mode is a massage machine according to claim 11 characterized by including the location corresponding to a user's shoulder or a back bent back at least.

[Claim 13] said free medical treatment -- an on-the-strength setting means -- said search mode -- setting -- free medical treatment -- the free medical treatment which change of the direction where the contact pressure presumed by said contact

pressure presumption means becomes weaker when it is made to change in the direction which strengthens reinforcement produces −− reinforcement −− being based −− free medical treatment −− the massage machine according to claim 9 to 12 characterized by setting up reinforcement.

[Claim 14] said free medical treatment −− an on−the−strength setting means −− said search mode −− setting −− free medical treatment −− the free medical treatment which change of the direction where the contact pressure presumed by said contact pressure presumption means becomes strong when it is made to change in the direction which weakens reinforcement produces −− reinforcement −− being based −− free medical treatment −− the massage machine according to claim 9 to 13 characterized by setting up reinforcement.

[Claim 15] It has the control information for reinforcement. said free medical treatment −− a control means −− about each part of a user's body −− setting −− free medical treatment −− reinforcement becomes fixed −− as −− free medical treatment −− fixed [for controlling a means] −− free medical treatment −− Reinforcement is referred to. said free medical treatment −− the free medical treatment to which the on−the−strength setting means was set by said search mode activation −− said −− fixed −− free medical treatment −− the free medical treatment of those other than said search mode activation part by amending the control information for reinforcement −− the massage machine according to claim 9 to 14 characterized by setting up reinforcement.

[Claim 16] a change−request judging means to judge the existence of a user's setting change request −− having −− said free medical treatment −− a control means −− said free medical treatment −− the case where it is judged with said setting change request not being found after a strong setup −− said set−up free medical treatment −− the case where it is judged with free medical treatment based on reinforcement being performed, and there being said setting change request −− said search mode −− performing −− free medical treatment −− the massage machine according to claim 15 characterized by resetting reinforcement.

[Claim 17] said free medical treatment −− the time of resetting on the strength −− free medical treatment −− the free medical treatment which detects a need part −− a need part detection means −− having −− said free medical treatment −− a control means −− free medical treatment −− a need part ****** −− free medical treatment −− the massage machine according to claim 16 characterized by making conditions differ.

[Claim 18] said free medical treatment −− a need part detection means is fixed −− free medical treatment −− the free medical treatment amended based on the control

information for reinforcement -- reinforcement and the free medical treatment which it reset -- measuring reinforcement -- free medical treatment -- the massage machine according to claim 17 characterized by detecting a need part.

[Claim 19] said free medical treatment -- an on-the-strength setting means -- each -- free medical treatment -- free medical treatment of on a part and as opposed to a user -- reinforcement -- abbreviation -- it becomes fixed -- as -- free medical treatment -- the massage machine according to claim 9 to 12 characterized by setting up reinforcement.

[Claim 20] said free medical treatment -- a control means -- said search mode -- free medical treatment -- the massage machine according to claim 9 to 19 characterized by performing by the initial stage of operation.

[Claim 21] free medical treatment -- inside -- free medical treatment -- an on-the-strength change-request means to require strong setting modification -- having -- said free medical treatment -- the massage machine according to claim 9 to 20 characterized by a control means performing said search mode when setting modification is required by said on-the-strength change-request means.

[Claim 22] said on-the-strength change-request means -- a switch switchable in the two condition -- constituting -- said free medical treatment -- the presumed result of the contact pressure by the search mode by which an on-the-strength setting means is performed in the 1st condition of said switch -- the time of the change in the 2nd condition of said switch from the 1st condition -- deciding -- future free medical treatment -- the free medical treatment based on the contact pressure this decided in reinforcement -- the massage machine according to claim 21 characterized by to change into reinforcement.

[Claim 23] the free medical treatment which gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the massage machine characterized by to have an oscillating detection means detect vibration, and a form presumption means presume a user's form based on the detection result obtained by said oscillating detection means, in the massage machine equipped with the control means.

[Claim 24] the free medical treatment which gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the massage machine characterized by to have an oscillating detection means detect vibration, and an internal-state presumption means presume the internal state of a user's body based on the detection result obtained by said oscillating detection means, in the massage machine equipped with the control means.

[Claim 25] said free medical treatment — a control means — an internal state — responding — free medical treatment — the massage machine according to claim 24 characterized by changing reinforcement.

[Claim 26] Said internal state is a massage machine according to claim 24 or 25 characterized by being skinfold thickness.

[Claim 27] the free medical treatment which gives free medical treatment to a user — a means and free medical treatment — the free medical treatment which controls a means — the massage machine characterized by to have an oscillating detection means detect vibration, and a part location presumption means presume the location of the predetermined part a user's body based on the detection result obtained by said oscillating detection means, in the massage machine equipped with the control means.

[Claim 28] Said part location presumption means is a massage machine according to claim 27 characterized by presuming the location of other parts by making the predetermined part of said user's body into a criteria part.

[Claim 29] said free medical treatment — a control means — the presumed result of said part location presumption means — being based — free medical treatment — the massage machine according to claim 27 or 28 characterized by setting up an object part.

[Claim 30] the free medical treatment which gives free medical treatment to a user — a means and free medical treatment — the free medical treatment which controls a means — the massage machine equipped with the control means — setting — free medical treatment — the free medical treatment of a working user — a condition modification frequency detection means detect the modification frequency of conditions — having — said free medical treatment — a control means — said free medical treatment — the free medical treatment after responding to the modification frequency of conditions — the massage machine characterized by to be characterized by to change conditions.

[Claim 31] said free medical treatment — a control means — said free medical treatment — if the modification frequency of conditions is below a predetermined value — free medical treatment of future free medical treatment — a strong fall and free medical treatment — extension of a period, and free medical treatment — the massage machine according to claim 30 characterized by the thing of compaction of time amount for which either is performed at least.

[Claim 32] said free medical treatment — a control means — said free medical treatment — if the modification frequency of conditions is beyond a predetermined

value -- free medical treatment of future free medical treatment -- strong increase and free medical treatment -- compaction of a period, and free medical treatment -- the massage machine according to claim 30 or 31 characterized by the thing of extension of time amount for which either is performed at least.

[Claim 33] the free medical treatment which gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the massage machine equipped with the control means -- setting -- free medical treatment -- a posture modification frequency detection means detect the modification frequency of a working user's posture -- having -- said free medical treatment -- the free medical treatment of the free medical treatment after a control means responds to the modification frequency of said posture -- the massage machine characterized by to be characterized by to change conditions.

[Claim 34] said free medical treatment -- if the modification frequency of a control means of said posture is below a predetermined value -- free medical treatment of future free medical treatment -- a strong fall and free medical treatment -- extension of a period, and free medical treatment -- the massage machine according to claim 33 characterized by the thing of compaction of time amount for which either is performed at least.

[Claim 35] said free medical treatment -- if the modification frequency of a control means of said posture is beyond a predetermined value -- free medical treatment of future free medical treatment -- strong increase and free medical treatment -- compaction of a period, and free medical treatment -- the massage machine according to claim 33 or 34 characterized by the thing of extension of time amount for which either is performed at least.

[Claim 36] It is the massage machine according to claim 33 to 35 which is equipped with an oscillating detection means detect vibration, and a posture fluctuation judging means judge a user's posture fluctuation based on the detection result obtained by said oscillating detection means, and is carried out [that said posture modification frequency detection means carries out counting in the posture fluctuation obtained by said posture fluctuation judging means, and] as the description.

[Claim 37] the free medical treatment which gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the massage machine equipped with the control means -- setting -- free medical treatment -- a relaxed-state judging means to judge a working user's relaxed state -- having -- said free medical treatment -- the free medical treatment of the free medical treatment after a control means embraces said relaxed state -- the

massage machine characterized by being characterized by changing conditions.

[Claim 38] In the massage machine equipped with the control means the free medical treatment which gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— free medical treatment —— the anticipation which will be performed by termination from initiation —— free medical treatment —— with a track record anticipation index calculation means to compute the track record anticipation index which shows a track record said track record anticipation index and a predetermined reference value —— comparing —— anticipation —— free medical treatment —— the free medical treatment while judging a track record, after being based on this judgment result —— the massage machine characterized by having an anticipation conditioning means to set up conditions.

[Claim 39] said track record anticipation index —— free medical treatment —— the multiplier which shows reinforcement, and free medical treatment —— free medical treatment of a product with time amount —— the massage machine according to claim 38 characterized by being an addition value covering the whole time amount.

[Claim 40] In the massage machine equipped with the control means the free medical treatment which gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— the detection result obtained by oscillating detection means to detect vibration, and said oscillating detection means —— being based —— the contact to a user and said massage machine, or alienation —— the contact/alienation which presumes a condition —— with a state estimation means A form presumption means to presume a user's form based on the detection result obtained by said oscillating detection means, the detection result obtained by said oscillating detection means —— being based —— free medical treatment —— the free medical treatment which sets up reinforcement —— with an on-the-strength setting means the detection result obtained by said oscillating detection result —— being based —— free medical treatment —— the free medical treatment which detects a need part —— with a need part detection means It has a sequence setting means. the contact to the user obtained by said each means, and said massage machine, or alienation —— a condition, a user's form, and free medical treatment —— reinforcement and free medical treatment —— proper based on the information about a need part —— free medical treatment —— a sequence is set up —— proper —— free medical treatment —— said free medical treatment —— a control means —— said —— it was set up —— proper —— free medical treatment —— the massage machine characterized by giving free medical treatment according to a sequence.

[Claim 41] said —— proper —— free medical treatment —— a sequence —— setting —— free

medical treatment -- an approach and free medical treatment -- sequence and a list -- at least -- free medical treatment -- reinforcement and free medical treatment -- a period and free medical treatment -- the massage machine according to claim 40 characterized by setting either of the time amount up.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the massage machine which gives a contact pressure stimulus to the body for the purpose of recovery from fatigue or health promotion.

[0002]

[Description of the Prior Art] as the conventional massage machine -- the thing of a chair mold or a bed mold -- it is -- the both-sides muscular section of the backbone on the back -- rolling and a beat -- rubbing (inserting ****) -- back **** -- carrying out -- etc. -- free medical treatment -- what was constituted so that a stimulus might be given by the child is known.

[0003] moreover, such free medical treatment -- as a motion of a child -- a back side top -- back ****, such as vertical movement and ******, -- carrying out -- and a flush and a field -- abbreviation -- longitudinal slide movement, such as a perpendicular beat and press, gets to know -- having -- **** -- the patent official report No. 2681036 etc. -- like -- various free medical treatment -- the actuation technique in which actuation is realizable exists.

[0004]

[Problem(s) to be Solved by the Invention] However, in order to realize the optimal massage, a pro's living body sensing technology strong against the artifact at high sensitivity like a masseur and intelligent actuator control technique are required like the two pillars. this point and a JP,9-75413,B publication -- like -- free medical treatment -- although there are some which built the muscular rigidity meter in the child, a practical use technique does not follow on control of positioning and the measurement include angle of a measurement location, and contact pressure etc., and this technique has not been established.

[0005] therefore -- the present device, for example, a chair-type massage machine, -- oneself -- a therapy part -- the optimal free medical treatment -- in order to adjust even to a stimulus, while completing the following procedures and being very

troublesome -- unnecessary free medical treatment -- the stimulus had been to be added between them Moreover, especially, when it was going to operate the actuation switch in the condition of having pressed for the back also hanging down a head from a crest in free medical treatment of the neighborhoods, such as a shoulder and a crest, since an eye line was upward, it had to adjust with the posture which lifted the actuation switch even to the eye line, and had become a burden.

[0006] (The optimal free medical treatment example of an adjustment procedure to a stimulus)

** Sit down.

** while a power source is switched on and standing ready for the time being -- free medical treatment -- move a child.

** the way or posture which sits down -- changing -- free medical treatment -- adjust so that a stimulus of a child may suit itself.

** free medical treatment -- free medical treatment required of actuation switches, such as remote control, when a stimulus of a child does not suit itself -- a location -- free medical treatment -- move a child and adjust.

** the optimal -- free medical treatment -- until it is stimulated -- free medical treatment -- selection of an approach, and free medical treatment -- adjust reinforcement.

[0007] Moreover, since the massage of a shoulder and a neck location tended to be influenced by the form of the difference, it needed the adjustment according to individual by switch actuation of a hand, and was troublesome. Since a shoulder and a neck location sat down and were influenced also by the direction, fine tuning according to how to sit down was also required for them. thus -- since the shoulder and neck location which were decided were used also as positioning criteria like a user's each part of the body and the massage like each part of the body was performed according to positioning of a shoulder and a neck, if adjustment of a shoulder and a neck location is not correct -- the whole body -- free medical treatment -- the case where it is the mode -- the part where the regio occipitalis capitis etc. is unsuitable -- free medical treatment -- the stimulus of a child may have been added.

[0008] free medical treatment of the reinforcement more than proper reinforcement -- since a stimulus causes the massage fatigue etc. conversely and causes fatigue increase -- free medical treatment -- it is necessary to adjust reinforcement however, free medical treatment -- if it is going to adjust reinforcement -- free medical treatment -- a part -- the optimal free medical treatment -- since

reinforcement differed, it had to adjust according to a user's form (the amount of skinfold thickness was also included), many actuation switches needed to be operated, and it was troublesome. Moreover, also when the way and the posture which users sit down according to a massage machine had to be changed, it was. on the other hand, proper -- free medical treatment -- a strong detection sake -- free medical treatment -- the free medical treatment which was suitable for free medical treatment after being based on the limit on the sensor structure for detection and endurance, cost, etc. although there was an example which the child rubbed and added the pressure sensor, the muscle elasticity measurement sensor, etc. to the contact section with living bodies, such as a pellet, -- it is difficult to choose a child configuration and the quality of the material. moreover, a user's clothes -- free medical treatment -- although strong proper values differ, it is difficult to take such conditions into consideration by the sensor of a contact mold.

[0009] Moreover, it may have been generated [un-/ be / to the massage / although massage actuation was added to the stimulus to the part unsuitable in the condition with an unsuitable posture ON of an actuation switch / by sitting down since a massage machine will be operated, if it is made to start/end more off or taking a seat was carrying out / it / suitable / accidentally / **** / that it is not a posture / infants / a child or / sit down and / of being as touching on an actuation switch **** / arranging and]. furthermore, free medical treatment -- the time of making actuation of a child start -- free medical treatment -- since the reinforcement or the impression part of a stimulus are not known -- a user -- free medical treatment -- although it is troublesome in order to face with the posture which lengthened and established the body from the movable range of a child, or the neighborhood of the contact section, without it stands ready conversely -- free medical treatment -- if actuation of a child is made to start, a stimulus of unexpected reinforcement may be received.

[0010] Thus, amount of information required for actuator control in order to realize the optimal massage also has information with it better [not to depend on a user's input but to have enabled it to detect automatically] while actuation will become complicated, if it is large and a user is going to input this. This is applied similarly, even when not only a massage machine but relaxation equipment tends to realize optimal relaxation.

[0011] The place which it is made in order that this invention may solve the technical problem of this conventional technique, and is made into the purpose is to offer the massage machine which can realize the optimal massage for an individual simple with

an easy configuration.

[0012]

[Means for Solving the Problem] First, the basic principle of this invention is explained.

[0013] If the source of vibration exists, the vibration will spread the installation side in which the body or massage machine of the configuration member of a massage machine and a user is installed. Vibration spread from the source of vibration or the source of vibration is detectable with the oscillating detection means installed in the predetermined part of a massage machine. If a massage machine or a massage machine, a user, and/or an installation side are caught with a system, the frequency condition of the target system will change with the relative relation between the condition of a massage machine, a user, and an installation side or a massage machine, a user, and/or an installation side. By presuming the condition of the system which realizes a frequency condition or such a frequency condition from the oscillating information detected by the oscillating detection means paying attention to this phenomenon, this invention acquires the information about relative relation or the whole like matching of not only the information about each component of a system but each components, and uses this for control of a massage machine.

[0014] Although the massage machine is explained below, this invention can be applied almost similarly not only about a massage machine but relaxation equipment. A massage machine and relaxation equipment are distinguished mainly in respect of the purpose or the operation effectiveness. Relaxation equipment can be defined as what gives a physical or mental stimulus for the purpose of relaxation of mental or corporal stress to a massage machine being what gives a contact pressure stimulus to the body for the purpose of recovery from fatigue or health promotion. however, the massage as a contact pressure stimulus also has a masseur slowly in the phase of the telophase of the early stages of a series of massages ―― it is ―― it may be carried out in order to acquire the effectiveness of the therapy of a disease or a failure depending on the way of giving and to make mental or corporal tensions ease [rather than] rather like [in the case of giving a contact pressure stimulus weakly] Thus, a massage and relaxation are not necessarily distinguishable. Therefore, there may be equipment which has the function of both a massage machine and relaxation equipment, and this invention can be applied also to such [naturally] equipment.

[0015] the following explanation ―― free medical treatment ―― it is similarly realized about relaxation equipment equipped with a relaxation means equivalent to the massage machine equipped with the means to give a user the relaxation effectiveness.

[0016] the free medical treatment which this invention gives free medical treatment to

a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the detection result obtained by oscillating detection means detect vibration, and said oscillating detection means, in the massage machine equipped with a control means -- being based -- free medical treatment -- the free medical treatment which sets up conditions -- a conditioning means -- having -- said free medical treatment -- a control means -- said free medical treatment -- the free medical treatment set up by the conditioning means -- it carries out controlling based on conditions as the description.

[0017] thus, the detection result by the oscillating detection means -- free medical treatment -- if it is that to which a frequency condition is changed while information required for control with an easy configuration is acquirable, if it uses for a setup of conditions -- free medical treatment -- since it can use for a setup of conditions, complicated input operation can be omitted or simplified and the massage machine which can realize the optimal massage for an individual simple can be provided. here -- free medical treatment -- conditions -- free medical treatment -- an approach and free medical treatment -- sequence and free medical treatment -- reinforcement and free medical treatment -- a period and free medical treatment -- time amount etc. is such combination. Moreover, as an oscillating detection means, although an acceleration sensor, a pressure-sensitive sensor, a distortion sensor, etc. can be used, it is not restricted to this.

[0018] In the massage machine equipped with the control means moreover, the free medical treatment which this invention gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- It has a state estimation means. the detection result obtained by oscillating detection means to detect vibration, and said oscillating detection means -- being based -- the contact to said user and said massage machine, or alienation -- the contact/alienation which presumes a condition -- said free medical treatment -- the presumed result according [a control means] to said presumed means -- being based -- said free medical treatment -- it is characterized by controlling a means.

[0019] the case where take a seat to a massage machine in order that a user may use it (contact), or end use, or it is interrupted, and leaves from a massage machine (alienation) -- like -- alienation -- the contact condition from a condition -- or the alienation from a contact condition -- detecting such vibration, since impulse force acts and vibration arises, in shifting to a condition -- contact and alienation -- the shift between conditions can presume. If the condition before shift is acquired as information by a certain approach, the condition about the condition after shift can be

presumed combining the information on the shift between said conditions. Moreover, since vibration may arise also when it is going to change a contact condition like [in case a user changes the posture over a massage machine] and applies the force, it also becomes possible by detecting such vibration to presume in what kind of contact condition a user is to a massage machine. thus, the contact/alienation to a user's massage machine —— if a condition is used for control, since input operation can be omitted or simplified, the massage machine which can realize the optimal massage for an individual simple can be offered. if taking a seat (taking a seat)/leaving of a user (leaving) can be presumed —— this —— responding —— free medical treatment —— the power source and main power supply of a means can be carried out **/**. A user can omit **/running open of a power source by this. in such a case, the contact by the oscillating detection means / alienation —— it is desirable to make it always operate only a state estimation function in standby and low-power mode.

[0020] You may make it vibration detected by said oscillating detection means be vibration produced by the contact or alienation of a user to a massage machine.

[0021] vibration detected by said oscillating detection means —— said free medical treatment —— you may make it be vibration based on vibration of a means

[0022] said free medical treatment —— the free medical treatment which drives a means —— a means driving source —— this —— free medical treatment —— from a means driving source —— this —— free medical treatment —— vibration which is equipped with the driving force means of communication which transmits driving force to a means, and is detected by said oscillating detection means —— said free medical treatment —— you may make it be vibration based on one of vibration at least of a means driving source and a driving force means of communication

[0023] thus, the thing of versatility [source of vibration / which produces vibration detected by the oscillating detection means] —— it can use —— free medical treatment —— with actuation, the source of vibration of the vibrator which vibrates independently can also be used.

[0024] the free medical treatment which this invention gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— the detection result obtained by oscillating detection means to detect vibration, and said oscillating detection means, in the massage machine equipped with the control means —— being based —— free medical treatment —— the free medical treatment which sets up reinforcement —— it carries out having had the on-the-strength setting means as the description.

[0025] thus, the detection result by the oscillating detection means —— free medical

treatment -- if it is that to which a frequency condition is changed while information required for control with an easy configuration is acquirable, if it uses for a strong setup -- free medical treatment -- since it can use for a setup of conditions on the strength, complicated input operation can be omitted or simplified and the massage machine which can realize the optimal massage for an individual simple can be provided.

[0026] said oscillating detection means -- said free medical treatment -- you may make it detect the vibration based on vibration of a means

[0027] the detection result obtained by said oscillating detection means -- being based -- said free medical treatment of a user -- a contact pressure presumption means to presume change of the contact pressure to a means -- having -- said free medical treatment -- the presumed result from which an on-the-strength setting means is acquired by said contact pressure presumption means -- being based -- free medical treatment -- you may make it set up reinforcement

[0028] free medical treatment of a user -- change of the contact pressure to a means -- free medical treatment -- in making a means into the source of vibration, it acts as change of a frequency condition notably especially. therefore, free medical treatment -- since it can be used for control information acquisition though free medical treatment is given if the vibration for free medical treatment of a means is used as the source of vibration -- a still easier configuration -- it is -- and -- more -- free medical treatment with high degree of accuracy -- the massage machine in which a setup on the strength is possible can be offered.

[0029] a said contact pressure presumption sake -- free medical treatment -- while changing reinforcement -- free medical treatment -- it is desirable to have the search mode which drives a child.

[0030] if such search mode is established -- actual free medical treatment -- while feeling reinforcement -- favorite free medical treatment -- since reinforcement can be set up certainly and simple, the massage suitable for a user individual is realizable simple.

[0031] moreover, the free medical treatment to a user -- in order to change a part -- said free medical treatment -- the free medical treatment to which a means is moved -- a means migration means -- having -- said free medical treatment -- it is in a child's predetermined successive range, and may be made to perform search mode continuously.

[0032] thus, the free medical treatment based on [if it carries out] somesthesis in more parts -- since a strong setup is attained, the massage which was further

suitable for the user individual is realizable.

[0033] the free medical treatment to a user -- in order to change a part -- said free medical treatment -- the free medical treatment to which a means is moved -- a means migration means -- having -- said free medical treatment -- it may be made to perform search mode by two or more [in a child's successive range].

[0034] thus -- if it carries out -- free medical treatment -- the free medical treatment based on somesthesis in more parts even when a means moves gradually or discretely -- since a strong setup is attained, the massage which was further suitable for the user individual is realizable.

[0035] As for the activation part of said search mode, it is desirable to include the location corresponding to a user's shoulder or a back bent back at least.

[0036] since a shoulder, the back, and the waist are generally the high parts of the need for free medical treatment -- such a part -- free medical treatment -- since it will become possible to reduce search mode activation parts while it should be suitable in the massage with the user individual if an on-the-strength setup is carried out -- free medical treatment -- the time amount to a setup on the strength can be shortened, and simple nature can also be raised.

[0037] said free medical treatment -- an on-the-strength setting means -- said search mode -- setting -- free medical treatment -- the free medical treatment which change of the direction where the contact pressure presumed by said contact pressure presumption means becomes weaker when it is made to change in the direction which strengthens reinforcement produces -- reinforcement -- being based -- free medical treatment -- you may make it set up reinforcement

[0038] a user -- free medical treatment -- the case where it is sensed that reinforcement is too strong -- the body -- free medical treatment -- since it is common that it tends to be made to move in the direction made to estrange from a means, and is going to weaken contact pressure -- such actuation of a user -- free medical treatment -- the declaration of intention to reinforcement -- catching -- free medical treatment -- the massage which was further suitable for the user is realizable by setting up reinforcement. a user -- receiving -- such actuation -- free medical treatment -- it explains setting up reinforcement and may be made to make such actuation intentional as a setup.

[0039] said free medical treatment -- an on-the-strength setting means -- said search mode -- setting -- free medical treatment -- the free medical treatment which change of the direction where the contact pressure presumed by said contact pressure presumption means becomes strong when it is made to change in the

direction which weakens reinforcement produces ── reinforcement ── being based ── free medical treatment ── you may make it set up reinforcement

[0040] a user ── free medical treatment ── the case where it is sensed that reinforcement is too weak ── the body ── free medical treatment ── since it is common to make it move in the direction forced on a means, and to make contact pressure like [it is strong and] ── such actuation of a user ── free medical treatment ── the declaration of intention to reinforcement ── catching ── free medical treatment ── the massage which was further suitable for the user is realizable by setting up reinforcement. a user ── receiving ── such actuation ── free medical treatment ── it explains setting up reinforcement and may be made to make such actuation intentional as a setup.

[0041] moreover, said free medical treatment ── a control means ── about each part of a user's body ── setting ── free medical treatment ── reinforcement becomes fixed ── as ── free medical treatment ── fixed [for controlling a means] ── free medical treatment ── the control information for reinforcement ── having ── **** ── said free medical treatment ── the free medical treatment to which the on-the-strength setting means was set by said search mode activation ── reinforcement ── referring to ── said ── fixed ── free medical treatment ── the free medical treatment of those other than said search mode activation part by amending the control information for reinforcement ── reinforcement may be made set up

[0042] about each part of a user's body ── setting ── free medical treatment ── if free medical treatment is controlled so that reinforcement becomes fixed, since the massage which suited is possible for extent to which what kind of user is also received ── criteria [free medical treatment / such] ── carrying out ── a user individual's feelings ── taking in ── free medical treatment ── setting up reinforcement ── the free medical treatment of those other than a search mode activation part ── reinforcement can be set up simpler.

[0043] a change-request judging means to judge the existence of a user's setting change request ── having ── said free medical treatment ── a control means ── said free medical treatment ── the case where it is judged with said setting change request not being found after a strong setup ── said set-up free medical treatment ── the case where it is judged with free medical treatment based on reinforcement being performed, and there being said setting change request ── said search mode ── performing ── free medical treatment ── reinforcement may be made to reset

[0044] about a user's each part of the body ── setting ── free medical treatment ── a setup can be simplified by giving free medical treatment by the setup concerned, if the

free medical treatment set up on the basis of the free medical treatment to which reinforcement becomes fixed is proper for a user, if not proper for a user, it can set up again by the setting change request, and more proper MASSAJI ** can be obtained.

[0045] said free medical treatment — the time of resetting on the strength — free medical treatment — the free medical treatment which detects a need part — a need part detection means — having — said free medical treatment — a control means — free medical treatment — a need part ***** — free medical treatment — you may make it make conditions differ

[0046] thus, free medical treatment — if especially a user detects the specific part which desires free medical treatment as a need part — free medical treatment — setting — free medical treatment — other parts on the other hand which give free medical treatment preponderantly to a need part — free medical treatment — the free medical treatment to which reinforcement is reduced — while obtaining satisfaction of a user by setting up shortening time amount or omitting free medical treatment etc. — free medical treatment — the fatigue can be prevented.

[0047] said free medical treatment — a need part detection means is fixed — free medical treatment — the free medical treatment amended based on the control information for reinforcement — reinforcement and the free medical treatment which it reset — measuring reinforcement — free medical treatment — you may make it detect a need part

[0048] said free medical treatment — an on-the-strength setting means — each — free medical treatment — free medical treatment of on a part and as opposed to a user — reinforcement — abbreviation — it becomes fixed — as — free medical treatment — it is desirable that reinforcement can be set up.

[0049] although it is difficult to provide all users with a proper massage since various a user's physiques etc. differ — such free medical treatment — if a setup on the strength is prepared, while being able to give more users a certain amount of satisfaction — free medical treatment — it can use also as criteria of a setup on the strength.

[0050] said free medical treatment — a control means — said search mode — free medical treatment — it may be made to perform by the initial stage of operation.

[0051] If it does in this way, while being able to simplify a complicated setup by contact pressure modification actuation in search mode, proper free medical treatment can be offered.

[0052] free medical treatment — inside — free medical treatment — an on-the-strength change-request means to require strong setting modification —

having -- said free medical treatment -- a control means may be made to perform said search mode, when setting modification is required by said on-the-strength change-request means.

[0053] If it does in this way, while a user gives free medical treatment, a setup can be changed in easy actuation to change a setup.

[0054] said on-the-strength change-request means -- a switch switchable in the two condition -- constituting -- said free medical treatment -- the presumed result of the contact pressure by the search mode by which an on-the-strength setting means is performed in the 1st condition of said switch -- the time of the change in the 2nd condition of said switch from the 1st condition -- deciding -- future free medical treatment -- the free medical treatment based on the contact pressure this decided in reinforcement -- you may make it change into reinforcement

[0055] In order to simplify a configuration and actuation, the direction with few input means, such as a switch, is desirable, and if setting modification is possible, simplification of a configuration and actuation will be attained with one switch in this way.

[0056] the free medical treatment which this invention gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- in the massage machine equipped with the control means, it is characterized by to have an oscillating detection means to detect vibration, and a form presumption means to presume a user's form based on the detection result obtained by said oscillating detection means.

[0057] thus, the free medical treatment corresponding to a user's form when carrying out -- a setup of conditions is attained. That is, since complicated input operation can be omitted or simplified while a user's form information is acquirable with an easy configuration, the massage machine which can realize the optimal massage for an individual simple can be offered. You may enable it to presume not only the appearance of the body but the endomorph, the normal mode, the leptosome, etc. as a form.

[0058] the free medical treatment which this invention gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- in the massage machine equipped with the control means, it is characterized by to have an oscillating detection means detect vibration, and an internal-state presumption means presume the internal state of a user's body based on the detection result obtained by said oscillating detection means.

[0059] thus, the free medical treatment corresponding to a user's internal state when

carrying out -- a setup of conditions is attained. Since the information about a user's internal state can be acquired and complicated input operation can be further omitted or simplified by this with the easy configuration using an oscillating detection means at this time, the massage machine which can realize the optimal massage for an individual simple can be offered. As such a user's internal state, there is whenever [amount / of skinfold thickness /, muscular tonus, and circulation] etc., and if detection with an oscillating detection means is possible, it will not be restricted to this.

[0060] said free medical treatment -- a control means -- an internal state -- responding -- free medical treatment -- it is desirable to change reinforcement.

[0061] You may make it said internal state be skinfold thickness.

[0062] the free medical treatment which this invention gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- in the massage machine equipped with the control means, it is characterized by to have an oscillating detection means detect vibration, and a part location presumption means presume the location of the predetermined part a user's body based on the detection result obtained by said oscillating detection means.

[0063] thus -- if it carries out -- free medical treatment -- the free medical treatment according to an object part -- a setup of conditions is attained. Therefore, giving free medical treatment to an unsuitable part can also be prevented. At this time, the positional information of the predetermined part a user's body is acquirable with the easy configuration using an oscillating detection means. Moreover, by this, since complicated input operation can be omitted or simplified, the massage machine which can realize the optimal massage for an individual simple can be offered.

[0064] You may make it said part location presumption means presume the location of other parts by making the predetermined part of said user's body into a criteria part. The location like each part of the body can be presumed without increasing the number of the parts which presume a location using an oscillating detection means, if it does in this way.

[0065] said free medical treatment -- a control means -- the presumed result of said part location presumption means -- being based -- free medical treatment -- you may make it set up an object part

[0066] the free medical treatment which this invention gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the massage machine equipped with the control means -- setting -- free medical treatment -- free medical treatment of a working user -- a condition

modification frequency detection means detect the modification frequency of conditions -- having -- said free medical treatment -- a control means -- said free medical treatment -- the free medical treatment after responding to the modification frequency of conditions -- it carries out that it is characterized by to change conditions as the description.

[0067] free medical treatment -- if conditions are proper -- modification frequency -- few -- free medical treatment -- since modification frequency will increase on conditions if not proper -- free medical treatment -- the free medical treatment after responding to the modification frequency of conditions -- if conditions are changed -- free medical treatment -- modification of conditions can be simplified and more proper free medical treatment can be performed.

[0068] said free medical treatment -- a control means -- said free medical treatment -- if the modification frequency of conditions is below a predetermined value -- free medical treatment of future free medical treatment -- a strong fall and free medical treatment -- extension of a period, and free medical treatment -- compaction of time amount -- it may be made to perform either at least.

[0069] thus, free medical treatment of the user to whom proper free medical treatment is performed if it carries out -- the fatigue can be prevented.

[0070] said free medical treatment -- a control means -- said free medical treatment -- if the modification frequency of conditions is beyond a predetermined value -- free medical treatment of future free medical treatment -- strong increase and free medical treatment -- compaction of a period, and free medical treatment -- extension of time amount -- it may be made to perform either at least.

[0071] If it does in this way, more proper free medical treatment can be performed to the user who senses that free medical treatment is unsatisfactory.

[0072] the free medical treatment which this invention gives free medical treatment to a user -- a means and free medical treatment -- the free medical treatment which controls a means -- the massage machine equipped with the control means -- setting -- free medical treatment -- a posture modification frequency detection means detect the modification frequency of a working user's posture -- having -- said free medical treatment -- the free medical treatment of the free medical treatment after a control means responds to the modification frequency of said posture -- it carries out changing conditions as the description.

[0073] free medical treatment -- if conditions are proper -- the modification frequency of a user's posture -- few -- free medical treatment -- the free medical treatment since the modification frequency of a posture will increase on conditions if

not proper, after responding to the modification frequency of a posture — if conditions are changed — free medical treatment — modification of conditions can be simplified and more proper free medical treatment can be performed.

[0074] said free medical treatment — if the modification frequency of a control means of said posture is below a predetermined value — free medical treatment of future free medical treatment — a strong fall and free medical treatment — extension of a period, and free medical treatment — compaction of time amount — it may be made to perform either at least.

[0075] thus, free medical treatment of the user to whom proper free medical treatment is performed if it carries out — the fatigue can be prevented.

[0076] said free medical treatment — if the modification frequency of a control means of said posture is beyond a predetermined value — free medical treatment of future free medical treatment — strong increase and free medical treatment — compaction of a period, and free medical treatment — extension of time amount — it may be made to perform either at least.

[0077] If it does in this way, more proper free medical treatment can be performed to the user who senses that free medical treatment is unsatisfactory.

[0078] It has an oscillating detection means to detect vibration, and a posture fluctuation judging means to judge a user's posture fluctuation based on the detection result obtained by said oscillating detection means, and may be made for said posture modification frequency detection means to carry out counting in the posture fluctuation obtained by said posture fluctuation judging means.

[0079] If it does in this way, posture modification frequency is detectable with an easy configuration.

[0080] the free medical treatment which this invention gives free medical treatment to a user — a means and free medical treatment — the free medical treatment which controls a means — the massage machine equipped with the control means — setting — free medical treatment — a relaxed-state judging means to judge a working user's relaxed state — having — said free medical treatment — free medical treatment of the free medical treatment after a control means embraces said relaxed state — it is characterized by being characterized by changing conditions.

[0081] the free medical treatment since it is alike, and it follows and a user relaxes more, after [when free medical treatment will progress if proper free medical treatment is performed] judging a relaxed state and embracing a relaxed state — if conditions are changed — free medical treatment — modification of conditions can be simplified and more proper free medical treatment can be performed. this relaxed

state —— for example, free medical treatment —— it can also judge with the modification frequency and posture modification frequency of conditions.

[0082] In the massage machine equipped with the control means the free medical treatment which this invention gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— free medical treatment —— the anticipation which will be performed by termination from initiation —— free medical treatment —— with a track record anticipation index calculation means to compute the track record anticipation index which shows a track record said track record anticipation index and a predetermined reference value —— comparing —— anticipation —— free medical treatment —— the free medical treatment while judging a track record, after being based on this judgment result —— it is characterized by having an anticipation conditioning means to set up conditions.

[0083] thus —— if it carries out —— the present free medical treatment —— the free medical treatment after being based on the track record of the free medical treatment which will be made by termination by setup of conditions —— since conditions are set up, the stress by the massage fatigue is avoidable.

[0084] said track record anticipation index —— free medical treatment —— the multiplier which shows reinforcement, and free medical treatment —— free medical treatment of a product with time amount —— you may make it be an addition value covering the whole time amount

[0085] In the massage machine equipped with the control means the free medical treatment which this invention gives free medical treatment to a user —— a means and free medical treatment —— the free medical treatment which controls a means —— the detection result obtained by oscillating detection means to detect vibration, and said oscillating detection means —— being based —— the contact to a user and said massage machine, or alienation —— the contact/alienation which presumes a condition —— with a state estimation means A form presumption means to presume a user's form based on the detection result obtained by said oscillating detection means, the detection result obtained by said oscillating detection means —— being based —— free medical treatment —— the free medical treatment which sets up reinforcement —— with an on-the-strength setting means the detection result obtained by said oscillating detection result —— being based —— free medical treatment —— the free medical treatment which detects a need part —— with a need part detection means It has a sequence setting means. the contact to the user obtained by said each means, and said massage machine, or alienation —— a condition, a user's form, and free medical treatment —— reinforcement and free medical treatment —— proper based on the

information about a need part — free medical treatment — a sequence is set up — proper — free medical treatment — said free medical treatment — a control means — said — it was set up — proper — free medical treatment — it is characterized by giving free medical treatment according to a sequence.

[0086] thus, the easy configuration using the oscillating detection means when carrying out — the contact to a user and said massage machine, or alienation — a condition, a user's form, and free medical treatment — reinforcement and free medical treatment — since the information about a need part is acquirable, the massage machine which simplifies the input of such information and can realize the optimal massage for an individual can be offered.

[0087] said — proper — free medical treatment — a sequence — setting — free medical treatment — an approach and free medical treatment — sequence and a list — at least — free medical treatment — reinforcement and free medical treatment — a period and free medical treatment — it is desirable to set either of the time amount up.

[0088] the free medical treatment set up here — a sequence — *********(ing) — stroking — a beat — rubbing — etc. — free medical treatment — an approach — each — free medical treatment — everything but the combination sequence of an approach — free medical treatment — reinforcement and free medical treatment — a period and free medical treatment — time amount is not at least but ** is included.

[0089]

[Embodiment of the Invention] Hereafter, this invention is explained based on the gestalt of implementation of illustration.

[0090] (1st operation gestalt) Drawing 1 (a) is the perspective view showing the outline configuration inside the chair type massage machine 1 concerning the 1st operation gestalt of this invention, and drawing 1 (b) is drawing which the back also gave the condition that the user sat down to this massage machine 1, removed a part of section 2, and was seen from the side face.

[0091] The massage machine 1 is divided roughly into the three sections of the seat 3 on which a user sits, the back board section 2 which gives the back almost, and the leg 4 which carries a foot.

[0092] The seat 3 consists of a seat frame 7 of the abbreviation square supported almost in parallel, and a cushion layer 8 which is laid in the top face of the seat frame 7, and is fixed in a floor line mainly on the two touch-down sections 5 grounded to a floor line, the support saddle 6 which it prolongs two [at a time] in the direction of a vertical from each touch-down section 5, and a support saddle 6. The spring 9 is

formed in order to give resiliency when a user sits to the seat frame 7.

[0093] The leg 4 mainly consists of a leg frame 10 of an abbreviation rectangle, and a cushion layer 11 fixed to the front face of the leg frame 10. The leg frame 10 can be fixed now at a suitable include angle to the seat frame 7 according to the fixed device in which it is supported by the edge of the seat frame 7 rockable through the hinge 12, and the end is not illustrated.

[0094] The back board section 2 consists the massage device 14 mainly supported by the back board section frame 13 and the back board section frame 13 of an abbreviation rectangle movable, the back frame 15 fixed to the front face of the back board section frame 13, and the outside surface of the back board section 13 of the sheathing section 16 which built in the wrap cushion layer (un-illustrating). The back board section frame 13 can be fixed now at a suitable include angle to the seat frame 7 according to the fixed device in which it is supported by the edge of the seat frame 7 rockable through the hinge 17, and an end is not illustrated. the massage device 14 -- free medical treatment -- the free medical treatment as a means -- it consists of the migration device section 20 for moving along with the main device section 19 and the back board section frame 13 equipped with the child 18 grade. the pulleys 21 and 22 and the belt 23, and free medical treatment whose main device section 19 mainly transmits the driving force of a driving source (free medical treatment child driving source) 24 and a driving source 24 with this operation gestalt -- it consists of the device body section 25 in which children 18 and 18 were formed. the driving force transmitted to the device body section 25 through the belt 23 grade from the driving source 24 -- free medical treatment -- other drive transfer devices in which children 18 and 18 are driven are held. moreover, the rise-and-fall shaft 26 prolonged in the side where the migration device section (free medical treatment means migration means) 20 was formed in the device body section 25 -- rubbing -- business -- it consists of pinions 28, 28, 29, and 29 with which a shaft 27 and its edge were equipped, and it gears with the rack 30 prepared in the back board section frame 13, and moves. The back frame 15 is the plate-like part material which curved so that a user's back might be supported in accordance with the configuration, and makes the shape of a rectangle by which the center section was hollowed by the longitudinal direction. The back frame 15 can be formed from plastics, a sheet metal, etc., the back also hangs it down, and fixed support is carried out by the periphery side to the section frame 13. free medical treatment -- although the child 18 has projected to the back board section 2 front-face side through the slit of hole 15a of the back frame 15, and the sheathing section 16 which is not illustrated and it has come to be able to carry out

direct contact at a user, you may make it contact a user indirectly through the deformable sheet member prepared in the outermost layer of the sheathing section 16

[0095] Here, a driving force means of communication includes other drive transfer devices held in pulleys 21 and 22, a belt 23, and the device body section 25.

[0096] the following -- each -- free medical treatment -- the configuration of the massage device for enforcing a method is explained.

[0097] (*********(ing) flush actuation) Drawing 2 is the side elevation in which the back of the massage machine 1 also hanging down, and the sheathing section 16 and the back of the section 2 also hanging down, removing a part of section frame 13, and showing location change of the main device section 19.

[0098] the free medical treatment projected to a user's tooth-back side in connection with the back also hanging down and the main device section 19 moving up and down along with the section frame 13 as shown in drawing 2 -- when children 18 and 18 move along a tooth back (in an arrow head A and the direction of B), it *********, or flush actuation can be performed.

[0099] (Beat actuation) the side elevation in which drawing 3 (a) shows the beat actuation related part of the main device section 19 of the massage device 14 -- it is -- drawing 3 (b) -- the back -- hanging down -- a part of section 2 -- removing -- free medical treatment -- it is a side elevation explaining the actuation to the user of child 18a. drawing 3 (a) -- one free medical treatment -- although only a child 18 is shown, on both sides of the center line of the direction of the back, the same device also as the opposite side is prepared in the device body section 25.

[0100] an end -- free medical treatment -- the free medical treatment by which the child 18 was supported -- the child arm 31 should pass a flection -- it is inserted in housing 32 free [sliding], and the other end is connected with the end of the link member 33 free [rocking]. the other end of the link member 33 -- free medical treatment -- the edge of the rod prolonged from the bearing 35 supported to revolve free [rocking] is connected with the shaft 34 for child on-the-strength adjustment free [rocking]. housing 32 -- rubbing -- business -- it is supported by the shaft 27 free [rocking] through the clutch (un-illustrating) and the bush 37. The end of the rod 39 formed in the shape of a ball is connected with the socket of the shape of the spherical surface prepared in the arm 38 of housing 32 free [rocking], and the other end of this rod 39 is connected with the bearing 41 supported free [rocking] by the shaft 40 for beats free [rocking].

[0101] the housing 32 connected with the bearing 41 which the shaft 40 for beats rotated the centering on axial center of standard periphery top when the standard

rotated, and was supported to revolve by the shaft 40 for beats since eccentricity of the shaft 40 for beats was carried out and it was connected to the standard 51 by which a rotation drive is carried out (refer to drawing 5 (a)) through the rod 39 -- rubbing -- business -- it rocks to a shaft 27. free medical treatment -- the edge of the child arm 31 is connected with the link member 33 -- having -- **** -- the link member 33 -- free medical treatment -- connection section 33b by the side of the shaft 34 for child on-the-strength adjustment is rocked as a core. free medical treatment -- the stopper 41 is being fixed to the peripheral face of the child arm 31, and the spring 42 is infixed between the end faces of housing 32. if housing 32 rotates to the tooth-back side of the back board section 3 with rotation of the shaft 40 for beats as a two-dot chain line shows -- free medical treatment -- the child arm 31 retreats to a back board section tooth-back side (the direction of arrow-head C). the time of the shaft 40 for beats rotating [housing 32] to the front-face side of the back board section 3 with the further rotation, as a continuous line shows -- free medical treatment -- a child 18 projects to a front-face side (the direction of arrow-head D), hits a user's tooth back, and realizes beat actuation.

[0102] one shaft at which the shaft 40 for beats on either side is that which is carrying out eccentricity with a different phase to a standard 51 (this operation gestalt 180 degrees), and a standard 51 penetrates the transfer device hold section 50 as shown in drawing 5 (a), or the right and left by which is in phase and a rotation drive is carried out -- the case where it is an independent shaft -- right and left -- free medical treatment -- children 18 and 18 perform beat actuation by turns. standards 51 and 51 -- right and left -- if a standard 51 and the device in which a gap of relative angle of rotation between 51 is adjusted are established so that it constitutes from an independent shaft, and the shaft for both beats may be in phase and eccentricity may be carried out to the standards 51 and 51 on either side -- free medical treatment on either side -- children 18 and 18 can perform beat actuation to coincidence.

[0103] (Free medical treatment child on-the-strength adjustment device) drawing 4 (a) -- free medical treatment of the main device section 19 of a massage device -- the side elevation showing a child on-the-strength adjustment device related part -- it is -- drawing 4 (b) -- the back -- hanging down -- a part of section 2 -- removing -- free medical treatment -- it is a side elevation explaining the location change to a child's 18 user.

[0104] free medical treatment -- since eccentricity of the shaft 34 for child on-the-strength adjustment is carried out to a standard 45 and it is connected with it, if a standard 45 is rotated -- free medical treatment -- a centering on axial center of

standard periphery [shaft / 34 / for child on-the-strength adjustment] top --
rotating -- free medical treatment -- the bearing 34 currently supported to revolve
by the shaft 34 for child on-the-strength adjustment moves similarly in a centering on
axial center of standard 45 periphery top. the rod 36 of bearing 35 -- the link member
33 -- minding -- free medical treatment -- since the child arm 31 is connected --
migration of bearing 35 -- following -- free medical treatment -- the child arm 31 also
slides to housing 32, and moves in an arrow head E and the direction of F. if it moves
to the location which bearing 35 illustrates by the two-dot chain line by rotation of a
standard 45 -- the energization force of a spring 42 -- resisting -- free medical
treatment -- the child arm 31 is lengthened in the direction of arrow-head E -- having
-- free medical treatment -- child 18a also retreats to the tooth-back side of the
back board section 2. if a standard 45 is rotated further and bearing 35 moves to the
location shown as a continuous line -- free medical treatment -- the child arm 31 is
extruded in the direction of arrow-head F according to the energization force of a
spring 42 -- having -- free medical treatment -- a child 18 also projects in the
front-face side of the back board section 2. thus, free medical treatment -- since the
amount of protrusions of the direction which intersects perpendicularly with a child's
18 back board section 2 changes -- free medical treatment -- reinforcement in case
a child 18 presses or strikes a user can be adjusted.

[0105] (Flush actuation) the front view in which drawing 5 (a) shows the flush
actuation related part of the main device section 19 of the massage device 14 -- it is
-- drawing 5 (b) -- free medical treatment -- it is drawing explaining the actuation to
a child's 18 user.

[0106] the rise-and-fall shaft 26 from the transfer device hold section 50 which held
drive transfer devices, such as a gear which transmits the power from the driving
source which is not illustrated, -- and -- rubbing -- business -- the shaft 27 is
prolonged on right-and-left both sides, and a rotation drive is carried out by being
intermittent in the power transfer from a driving source. the rise-and-fall shaft 26 --
and -- rubbing -- business -- the shaft 27 penetrated the case of the device body
section 25, and is prolonged, and the edge is equipped with pinions 28, 28, 29, and 29.
It is fixed to the rise-and-fall shaft 26 by each, and pinions 28 and 28 are interlocked
with rotation of the rise-and-fall shaft 26, and are rotated, and migration of the
vertical direction which geared with the rack 30 and met the back board section frame
12 is realized. on the other hand -- pinions 29 and 29 -- rubbing -- business -- the
time of being equipped free [rotation] to the shaft 27 and the main device section 19
moving by rotation of the rise-and-fall shaft 26 -- a rack 30 -- gearing -- business --

it rotates independently of a shaft. the standard 51 of the shaft 40 for the beats from the transfer device hold section 50, and free medical treatment -- the shaft 40 for beats connected by having also prolonged the standard 53 of the shaft 34 for child on-the-strength adjustment on right-and-left both sides, carrying out a rotation drive by being intermittent in the power transfer from a driving source, and carrying out eccentricity in connection with this, and free medical treatment -- the shaft 34 for child on-the-strength adjustment rotates or stops.

[0107] rubbing -- business -- the bush 37 is established in the periphery of a shaft 27 by the hand of cut through the clutch 54 which is intermittent in drive transfer. The hoop direction is equipped with housing 32 free [sliding] through the peripheral face ball bearing 55 of a bush. Boss 37a which has the center line of L1 direction on the cylinder whose medial axis is L 2-way has penetrated, and the bush 37 is formed so that boss 37a and the both-ends side of shaft orientations may cross at right angles. It is made for L1 direction and L 2-way to be in the location of a crossover or torsion at this time. rubbing -- business -- the cam groove 38 describing the closed orbit which goes a shaft around of one articles is formed changing the location of shaft orientations to the peripheral face of a shaft according to the surrounding phase of a shaft, and pin 37b prepared in the bush 37 so that it might project in the boss 37a side is engaging with this cam groove 38. therefore, the direction in which a clutch 54 goes out -- rubbing -- business -- rotation of a shaft 27 also moves a bush 37 to shaft orientations with migration of engaged pin 37b according to orbital change of the shaft orientations of cam-groove 27a. Housing 32 also moves to shaft orientations with migration of the shaft orientations of a bush 37. Since the bearing 41 of the shaft 27 for beats is formed in shaft orientations movable, it is interlocked with migration of the shaft orientations of housing 32, and moves to shaft orientations. moreover, migration of the shaft orientations of housing 32 -- following -- free medical treatment -- a child 18 also moves in shaft orientations, i.e., the direction in which it intersects perpendicularly with ****** mostly along a user's tooth back. the condition that a clutch 54 goes out -- rubbing -- business -- when a shaft 27 is made to turn, a continuous line and a broken line show to <u>drawing 5</u> (a) and (b) -- as -- a bush 37, housing 32, and free medical treatment -- since a child 18 reciprocates to shaft orientations, he can realize flush actuation.

[0108] pin 37b of a bush 37 -- rubbing -- business -- connecting a clutch 54, where cam-groove 27a of a shaft 27 is engaged by the position of shaft orientations -- free medical treatment -- since the width of face of the shaft orientations between a child 18 and 18 can be adjusted -- a flush actuation device -- free medical treatment -- it

is also a child's width-of-face adjustment device.

[0109] (It rubs and operates) the front view in which the main device section 19 of the massage device 14 rubbing drawing 6 (a), and showing a relation part of operation -- it is -- drawing 6 (b) -- free medical treatment -- it is drawing explaining the actuation to a child's 18 user.

[0110] As the term of flush actuation explained, housing 32 is supported by the peripheral face of BUSSHUSHU 37 supported to revolve so that the shaft of the shaft 27 for medial-axis Tomomi might make a predetermined include angle pivotable in the hoop direction. the direction in which a clutch 54 is connected -- rubbing -- business -- if a shaft 27 is rotated -- the medial axis (L2 shows to drawing 5 (a)) of a bush 37 -- rubbing -- business -- the housing 32 currently held in the direction which intersects perpendicularly with the medial axis of a bush 37 since the surroundings of the shaft (L1 shows to drawing 5 (a)) of a shaft are rotated -- rubbing -- business -- the posture over the shaft orientations of a shaft 27 is changed. Since the bearing 41 of the shaft 40 for beats is connected with the arm 38 of housing 32 rockable, also when housing 32 carries out posture change, it has stopped on the shaft of the shaft 40 for beats. therefore, the free medical treatment supported by housing 32 -- the actuation which approaches a ***** direction [of a user] or body center-section side mutually, or is left while children 18 and 18 draw a radii orbit on drawing 6 (a) and (b) mostly, as a continuous line and a broken line show -- that is, it rubs and actuation is realized.

[0111] (Internal configuration of a massage machine) Drawing 7 is the block diagram showing the outline of the internal configuration of a massage machine.

[0112] Hereafter, the internal configuration of a massage machine is explained according to drawing 7 .

[0113] The [main control section] Based on the information from various detection means, while performing judgment processing etc., CPU61 which controls an external device is formed (the interface which controls I/O of a signal with the exterior omits explanation as what is built in CPU61.). CPU61 has received supply of power from the power supply section 62, a power supply section 62 is connected to an external power through a plug 63, and the Maine electric power switch 64 is formed between the power supply section 62 and the plug 63. The actuation switch section 67 which RAM66 and the user who memorize data which memorized the program which should be performed by CPU61, such as ROM65 and a detection result, give various directions is connected to CPU61. moreover -- in addition, the free medical treatment later mentioned to CPU61 -- the child mechanical component 68 and free medical

treatment -- the child location detecting element 69, the oscillating detecting element 70, and the information section 71 are connected. With this operation gestalt Mainly CPU61, ROM65 and the free medical treatment from RAM66 -- a control means and free medical treatment -- a conditioning means, contact / alienation -- a state estimation means and free medical treatment -- an on-the-strength setting means, a contact pressure setting means, a change-request judging means, and free medical treatment -- a need part detection means, an on-the-strength change-request means, a form presumption means, an internal-state presumption means, a part location presumption means, and a condition modification frequency detection means -- a posture modification frequency detection means, a posture fluctuation judging means, a relaxed-state judging means, a track record anticipation index calculation means, and an anticipation conditioning means -- proper -- free medical treatment -- a sequence setting means is constituted.

[0114] [-- free medical treatment -- child mechanical-component] -- free medical treatment -- a child 18 -- a beat -- rubbing -- free medical treatment of a flush etc. -- the Maine drive 72 for realizing actuation is connected, and driving force is transmitted to this Maine drive 72 from the driving sources 24, such as a motor. Moreover, the 1st drive control circuit section 75 which controls the Maine mechanical component 74 which consists of a Maine drive 72 and a driving source 24 is formed, and this 1st drive control circuit section 75 controls the Maine mechanical component 74 based on the information from CPU61. The power of the driving sources 24, such as a motor, is transmitted to the Maine drive 72 by power means of communication, such as a pulley and a belt, or a gearing. the Maine drive 72 -- rubbing -- business -- a shaft 27, a clutch 54, a bush 37, housing 32, the shaft 40 for beats, bearing 41, a rod 39, and free medical treatment -- it consists of child arm 31 grade. the Maine drive 72 -- rubbing -- business -- in order to change the hand of cut of a shaft 27 or to rotate or stop the standard 51 of the shaft 40 for beats, the mode change device in which the change of a gear or intermittence of a clutch is performed is established. the Maine drive intermittence means, such as an intermittent clutch, prepare the power transfer from a driving source 24 in the Maine drive 72 further -- having -- **** -- free medical treatment -- a child's 18 actuation can be stopped and only a driving source 24 can also be driven. With this Maine drive intermittence means, the source of vibration only of the driving source 24 can be carried out, and it can also be used. A mode change device and the Maine drive intermittence means are also oscillation mode change means.

[0115] moreover, free medical treatment -- the vertical drive 76 for moving a child 18

along with the longitudinal direction of the back board section 2 is connected. To the vertical drive 76, it changes or is intermittent in the power transfer with a driving source 24 and the rise-and-fall shaft 26, and this is prepared in forward inverse rotation or the vertical drive change device for making it stop. the information from CPU61 based on [the 2nd drive control circuit section 77 which controls the bottom drive 76 of besides is formed, and] the detection result of the below-mentioned vertical location detection means 83 -- responding -- free medical treatment -- the 2nd drive control circuit section 77 controls the vertical drive 76 so that a child 18 becomes a position.

[0116] moreover, free medical treatment -- the free medical treatment for adjusting the width of face of the direction which intersects perpendicularly with a user's ****** mostly to a child 18 -- the **** adjustment device 78 is connected. free medical treatment -- a **** adjustment device -- rubbing -- business -- it has a shaft 27, cam-groove 27a, a clutch 54, a bush 37, and pin 37b. this free medical treatment -- the 3rd drive control circuit section 79 which controls the **** adjustment device 78 is formed, and pin 37b and cam-groove 27a are engaged in a predetermined location according to the information from CPU61 based on the detection result of the below-mentioned width-of-face location detection means -- as -- the 3rd drive control circuit section 79 -- free medical treatment -- the **** adjustment device 78 is controlled.

[0117] moreover, free medical treatment -- the free medical treatment for adjusting the amount of protrusions from the back board section 2 to a child 18 -- the child on-the-strength adjustment device 80 is connected. free medical treatment -- the child on-the-strength adjustment device 80 -- free medical treatment -- the shaft 34 for child on-the-strength adjustment, a standard 53, bearing 35, the link member 33, and free medical treatment -- it has the child arm 31. this free medical treatment -- the 4th drive control circuit section 81 which controls the child on-the-strength adjustment device 80 is formed, and a standard 45 rotates according to the information from CPU61 based on the detection result of the below-mentioned protrusion location detection means 85 -- making -- free medical treatment -- the location of the shaft 34 for child on-the-strength adjustment moves -- making -- free medical treatment -- a child arm 31 serves as a position -- as -- the 4th drive control circuit section 81 -- free medical treatment -- a child on-the-strength adjustment device 80 controls.

[0118] the vertical drive 76 and free medical treatment -- the **** adjustment device 78 and free medical treatment -- the power of the child on-the-strength adjustment

device 80 is also transmitted through power means of communication, such as a pulley and a belt, or a gearing from a driving source 24. The 2nd thru/or the 4th drive control circuit section can also control the source 24 of a direct drive.

[0119] free medical treatment -- power supplies the child mechanical component 68 from a power supply section 62 -- having -- **** -- the signal from CPU61 -- free medical treatment -- the free medical treatment which is intermittent in the electric power supply to the child mechanical component 68 -- the child drive switch 82 is formed.

[0120] [-- free medical treatment -- to child location detecting-element]CPU61 free medical treatment -- the location of the vertical direction in alignment with the longitudinal direction of a child's 18 back board section 2 the vertical location detection means 83 for detecting, and free medical treatment -- the width-of-face location detection means 84 for detecting the width of face which is spacing of the direction which intersects perpendicularly with a longitudinal direction along children's 18 and 18 back board section 2 front face, and free medical treatment -- the protrusion location detection means 85 for detecting the amount of protrusions from a child's 18 back board section front face the free medical treatment which it had -- the child location detecting element 69 connects -- having -- **** -- CPU61 -- free medical treatment -- a child's 18 positional information is offered. these detection means 83, 84, and 85 -- a microswitch, a photograph micro sensor, etc. -- you may constitute -- the migration from a criteria location -- a variation rate -- you may make it an encoder and a rotational frequency meter detect an amount, and the rotational frequency in the transfer part from a driving source or angle-of-rotation change is not restricted to these in it.

[0121] The oscillating detecting element 70 equipped with the oscillating detection sensor 86, the signal-conditioning-circuit section 87, and A/D converter 88 as an oscillating detection means is connected to the [oscillating detecting element] CPU 61. As an oscillating detection sensor 86, acceleration sensors, such as a piezoresistance mold or a capacity mold, a pressure-sensitive sensor, a distortion sensor, etc. can be used. The detection shafts of an oscillating detection sensor may be 1 of 3 shaft orientations of X, Y, and Z, or shafts [them], and the biaxial direction, and may be 1 specific shaft orientations which make these 3 shaft and a predetermined include angle. Moreover, you may make it detect a synthetic vibration of biaxial [these] or three shafts. Therefore, two or more oscillating detection sensors 86 may be formed, and they establish an oscillating detection sensor change means, and you may make it change two or more sensors further according to the

oscillating information which wants to constitute and detect a sensor. A signal conditioning circuit 87 chooses suitably circuits, such as an amplifying circuit, a filter, and a rectifier circuit, according to a sensor output signal, and should just constitute them.

[0122] As an oscillating detection sensor is shown in drawing, the longitudinal direction lateral surface of the head of a back board section frame (86a), Although it can attach in the medial surface (86f) of the spring (86e) near the inner circumference edge of a back frame (86d) prepared in the seat frame, and a leg frame etc. on the direction lateral surface of a short hand (86b), and a main device section case (86c) What is necessary is to choose suitably according to the class of oscillating information and the property of an oscillating detection sensor which should be detected, and just to attach.

[0123] The information section 71 equipped with a voice information means 90 to consist of the display 89 and buzzer which consist of the [information sections] etc. LCD and LED, and provide a user with image information, or a loudspeaker, and to provide a user with speech information is connected to CPU61.

[0124] (Radical Osamu Motohara of this invention) It is based on the massage machine concerning this operation gestalt, and radical Motohara ** of this invention is explained.

[0125] it is shown in drawing 1 (a) —— as —— the hole of the back frame 15 —— the acceleration sensor was attached in the tooth-back side of the inner circumference edge by the side of 15a as oscillating detection sensor 86d. free medical treatment —— oscillating detection sensor 86d detected the high frequency oscillation produced on the inner circumference edge of the back frame 15 in the condition of not operating a child 18, by making into the source of vibration the power transmission device which transmits power from a driving source 24 and a driving source 24. At this time, as shown in drawing 1 (a), the X-axis (direction which the back also hangs down and goes to a tooth-back side from the front-face side of the section 2), a Y-axis (direction which the back also hangs down and goes upwards along with the section 2), and the Z-axis (direction which the back also hangs down and intersects perpendicularly with the back along with the section 2) were defined, and oscillating detection sensor 86d has been arranged so that it may become a detection shaft about X shaft orientations, Y shaft orientations, and Z shaft orientations, respectively. The vibration level (a "vibration level" is hereafter used as an amount which points out from the peak of displacement level to a peak.) of each direction is shown in drawing 8 . free medical treatment —— the main device section including a child was moved to the upper

location along with ****** from near the pelvis, and vibration was detected. up to an A point -- a pelvis -- free medical treatment -- a child -- contacting -- **** -- a B point -- an inferior angle of scapula -- contacting -- C point -- free medical treatment -- the child is in contact with the core of a scapula. Migration of the main device section 19 was especially detected as change of the vibration level of Y shaft orientations so that drawing 8 might also show. the lowest column -- free medical treatment -- the pressure variation which attached and measured the pressure sensor in the contact section with a child's 18 body is shown. if this pressure variation and the vibration level of Y shaft orientations are contrasted -- a user and free medical treatment -- it turns out that the contact condition with a child is detected as change of the vibration level of Y shaft orientations.

[0126] next, it is shown in drawing 1 (a) -- as -- oscillating detection sensor 86b -- the back -- hanging down -- the outside of the upper limit of the section frame 13 -- attaching -- free medical treatment -- a child 18 -- beat mode -- driving -- free medical treatment -- the result of having measured the child 18 in the condition of having fixed to the crest part from the shoulder is shown in drawing 9 . Time amount was taken so that the illustrated unit length might become an axis of abscissa with 1sec, and the vibration level is taken along the axis of ordinate. D point is a time of a user sitting down to the massage machine 1, in E field, a user leans on the back board section 2 ordinarily, and the user is taken as the condition of having floated the back from the back board section 2, in the F region. G1 field -- a user -- free medical treatment -- the condition of having contacted the back to the child 18 shallowly -- it is -- up to G2-G5 -- gradually -- free medical treatment of the back -- it is in the condition which is strengthening the contact pressure to a child 18, and the user is doing the deseat from the massage machine 1 by H points. Although change of the vibration level accompanying change of the relative relation between a user and a massage machine (back board section) has appeared also in the detection result of X shaft orientations and Y shaft orientations, change of the relative relation between a user and a massage machine (back board section) has appeared notably especially in change of the vibration level of Z shaft orientations.

[0127] Information, such as a contact condition of a user and massage machine including taking a seat and a deseat and relative physical relationship over the massage machine like a user's each part of the body, can be presumed by detection of oscillating information so that two above-mentioned examples may also show. from oscillating information -- in addition, free medical treatment of physiological information (internal state), such as conditions, such as an installation condition to the

installation side of for example, a massage machine and reinforcement of the installation side itself, an operating state of the main device section, and skinfold thickness of a user's body predetermined part, and a user -- information, such as contact pressure to a child, is acquired. If the information presumed from oscillating information is not restricted to these, and constitutes the frequency condition of a system and the change can detect as oscillating information, it can be presumed by detection of oscillating information.

[0128] the massage machine 1 applied to this operation gestalt as mentioned above -- a driving source 24 or free medical treatment, although a child 18 constitutes the source of vibration being intermittent in the power transfer from a driving source 24 -- moreover, the device which can creep is operated -- that free medical treatment for a drive -- a child 18 -- which free medical treatment -- it drives by the method -- by changing that drive approach The frequency component and vibration level component of vibration which are generated as the source of vibration differ from each other, and the oscillation mode as the source of vibration changes. Thus, also by changing the mode of operation of the massage machine 1, the oscillation mode of the source of vibration can be changed and it can use for acquisition of various oscillating information.

[0129] Hereafter, control of the massage machine using the oscillating information detected by the oscillating detection sensor is explained.

[0130] (Maine processing) The Maine processing of the massage machine concerning this operation gestalt is explained based on the flow chart shown in drawing 10 .

[0131] First, an electric power switch is turned on (Maine step 0 (MS)).

[0132] next, a ****** [that the user has sat down] -- or body taking a seat, the deseat, and presence detection processing which detect whether it is at its desk are performed (Maine step 1).

[0133] Next, form automatic detection processing which detects a user's form is performed (Maine step 2).

[0134] next, proper -- free medical treatment -- reinforcement and free medical treatment -- a need part is detected -- proper -- free medical treatment -- reinforcement and free medical treatment -- part automatic detection processing is performed (Maine step 3).

[0135] next, proper -- free medical treatment -- the mode is chosen automatically -- proper -- free medical treatment -- mode automatic selection processing is performed (Maine step 4).

[0136] next, free medical treatment -- the free medical treatment which ends

actuation automatically -- an automatic post process of operation is performed (Maine step 5), an electric power switch is turned off, and the Maine processing is ended (Maine step 6).

[0137] it is shown in <u>drawing 10</u> -- as -- body taking a seat and a deseat -- and proper [processing / presence detection /, processing / form automatic detection / and] -- free medical treatment -- reinforcement and free medical treatment -- proper [processing / part automatic detection / and] -- free medical treatment -- without performing the next processing succeedingly from each processing of mode automatic selection processing, an electric power switch may be turned off and the Maine processing may be ended

[0138] Hereafter, each processing which constitutes the step of said Maine processing is explained.

[0139] first, a ****** [that the user has sat down to the massage machine based on the oscillating information detected by the oscillating detection sensor] -- or the processing which detects whether it is at its desk is explained.

[0140] (Body taking a seat, a deseat, and presence detection processing 1) According to the flow chart shown in <u>Fig. 1111</u> , the processing which turns on the power source of a driving source after taking-a-seat detection is explained.

[0141] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 1).

[0142] Next, installation environmental allowable vibration value of standard M0 used as the criterion of the installation environment of the massage machine 1 It reads (step 2).

[0143] Next, by the oscillating detection sensor, measurement processing of a vibration level is performed and this value is assigned to Mx1 (step 3). Here, vibration of the RF from driving sources, such as a motor, is measured. In this case, a RF is the frequency of dozens - about 100 Hertz of numbers.

[0144] Mx1 >=M0 [next,] ****** -- it checks whether the oscillating detector system is operating normally (step 4).

[0145] Mx1<M0 If it becomes, error information (1) processing reported with a display or a voice information means by making into an error message the purport which has abnormalities in an oscillating detector system or an installation environment will be performed (step 5), and an electric power switch will be turned OFF (step 6).

[0146] Mx1 >=M0 If it becomes, the existence of a setup of a presence flag will be judged (step 7).

[0147] In the judgment of step 7, if there is a setup of a presence flag, the body

presence judging range values of standard M1 and M2 used as a criterion with the user present at the massage machine are read (step 8), after that, by the oscillating detection sensor, measurement processing of a vibration level will be performed and this value will be assigned to Mx2 (step 9).

[0148] Next, it judges whether it is body presence within the limits by whether it is M2 >=Mx2 >=M1 (step 10).

[0149] a step -- ten -- a judgment -- setting -- Mx -- two -- < -- M -- one -- becoming -- if -- free medical treatment -- a child -- a mechanical component -- 68 -- a driving source -- 24 -- actuation -- abnormalities -- it is -- a purport -- an error message -- ** -- carrying out -- a display -- 89 -- or -- voice -- information -- a means -- 90 -- reporting -- an error -- information -- (-- two --) -- processing -- carrying out (step 11) -- an electric power switch -- OFF -- carrying out (step 6) .

[0150] In the judgment of step 10, if it becomes M2<Mx2, if it judged whether it would have become the outside of the body presence range (M2 >=Mx2 >=M1) continuously (step 12) and only a period or a count predetermined in a measurement value does not continue it, return and after resetting a presence flag noting that it will leave the middle, if it continues (step 13), it will return to step 7 at step 7.

[0151] In the judgment of step 10, if it becomes M2 >=Mx2 >=M1, a presence flag will be set (step 14).

[0152] Next, value of standard valve flow coefficient 0 It reads (step 15). Here, valve flow coefficient is the coefficient of variation by the body motion of the measured vibration level, for example, can be set up as valve flow coefficient=(standard deviation of vibration level)/(average of a vibration level).

[0153] Next, calculation processing of coefficient of variation CVx1 is performed (step 16).

[0154] next -- valve flow coefficient -- zero -- >= -- CVx -- one -- ****** -- free medical treatment -- being possible -- being stable -- presence -- a condition -- ****** -- judging (step 17) -- valve flow coefficient -- zero -- >= -- CVx -- one -- it is -- if -- the body -- taking a seat - leaving -- and -- presence -- detection -- processing -- ending -- valve flow coefficient -- zero -- < -- CVx -- one -- it is -- if -- a posture -- being stabilized -- making -- as -- a display -- 89 -- or -- voice -- information -- a means -- 90 -- reporting -- an error -- information -- (-- three --) -- processing -- carrying out (step 18) -- step 7 -- returning .

[0155] In the judgment of step 7, if there is no setup of a presence flag, it will judge whether the oscillating impact signal by taking a seat and leaving of the body is detected (step 19). If the oscillating impact signal by taking a seat and leaving of the

body is not detected, it stands by until an oscillating impact signal is detected in the condition of performing only body taking-a-seat / leaving detection in low-power mode. If the oscillating impact signal by taking a seat and leaving of the body is detected, it will judge whether there is any setup of a taking-a-seat flag (step 20).

[0156] if there is a setup of a taking-a-seat flag in the judgment of step 20 -- on the way -- ****** it leaves -- a taking-a-seat flag -- resetting (step 21) -- free medical treatment -- the power source of the driving source 24 of the child mechanical component 68 is turned OFF (step 22), and it returns to step 7.

[0157] In the judgment of step 20, if there is no setup of a taking-a-seat flag, a taking-a-seat flag will be set (step 23), and the existence of a setup of a presence flag will be judged (step 24).

[0158] if it will progress to step 8 in the judgment of step 24 if there is a setup of a presence flag, and there is no setup of a presence flag -- free medical treatment -- it progresses to step 8, after turning on the power source of the driving source of a child mechanical component (step 25) (however, free medical treatment -- the child makes it stop).

[0159] (Body taking a seat, a deseat, and presence detection processing 2) According to the flow chart shown in Fig. 1212 , the processing which turns on the power source of a driving source before taking a seat is explained.

[0160] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 31).

[0161] next, free medical treatment -- the power source of the driving sources 24, such as a motor of the child mechanical component 68, is turned on (step 32). however, this time -- free medical treatment -- a child 24 is in the stopped condition.

[0162] Next, the installation environmental allowable vibration values of standard M3, M4, and valve flow coefficient1 are read (step 33).

[0163] Next, CVx1 is computed, while performing measurement processing of a vibration level and substituting this for Mx1 by the oscillating detection sensor (step 34). At this time, vibration of the RF from driving sources, such as a motor, is measured.

[0164] next -- M4 >=Mx1 >=M3 or valve flow coefficient1 >=CVx1 ****** -- the time of a user's absence -- the oscillating detecting element 70 and free medical treatment -- it checks whether the driving source 24 of the child mechanical component 68 is operating normally (step 35). Here, it has judged whether it is operating normally according to whether vibration is stable whether it is the inside of a convention vibration level.

[0165] the judgment of step 35 -- setting -- Mx1 -- < -- M3 -- or -- if it becomes CVx1**0 -- an oscillating detecting element or free medical treatment -- the error information (4) which actuation of the driving source of a child mechanical component makes an unusual purport an error message, and is reported with a display 89 or the voice information means 90 -- processing -- carrying out (step 36) -- free medical treatment -- the power source of the driving source 24 of the child mechanical component 68 is turned off (step 37), and an electric power switch 62 is turned off (step 38).

[0166] a step -- 35 -- a judgment -- setting -- M -- four -- < -- Mx -- one -- or -- valve flow coefficient -- one -- < -- CVx -- one -- becoming -- if -- main -- a device -- the section -- 19 -- housing -- abnormalities -- it is -- or -- or -- installation -- an environment -- abnormalities -- it is -- a purport -- an error message -- ** -- carrying out -- a display -- 89 -- or -- voice -- information -- a means -- 90 -- reporting -- an error -- information -- (-- five --) -- processing -- carrying out (step 39) -- step 37 -- progressing .

[0167] the judgment of step 35 -- setting -- M4 >=Mx1 >=M3 -- or if it becomes valve flow coefficient1 >=CVx1, the body presence judging range values of standard M1 and M2 are read (step 40), after that, an oscillating detection sensor will perform measurement processing of a vibration level, and this value will be assigned to Mx2 (step 41). Here, vibration of the RF from driving sources, such as a motor, is measured.

[0168] Next, it judges whether it is body presence within the limits by whether it is M2 >=Mx2 >=M1 (step 42).

[0169] a step -- 42 -- a judgment -- setting -- Mx -- two -- < -- M -- one -- becoming -- if -- free medical treatment -- a child -- a mechanical component -- 68 -- a driving source -- 24 -- actuation -- abnormalities -- it is -- a purport -- an error message -- ** -- carrying out -- a display -- 89 -- or -- voice -- information -- a means -- 90 -- reporting -- an error -- information -- (-- two --) -- processing -- carrying out (step 43) -- step 37 -- progressing .

[0170] It judges whether it is out of range (step 44). if it becomes Mx2>M1 in the judgment of step 42 -- a period or a count predetermined in a measurement value -- continuing -- body presence -- If absent, to step 40 Then, after [return, after resetting a presence flag noting that it will leave the middle, if it continues (step 45)], If predetermined time progress of whether predetermined time progress was carried out has not been judged and (step 46) carried out, it returns to step 40, and if predetermined time progress is carried out, it will progress to step 37.

[0171] In the judgment of step 42, if it becomes M2 >=Mx2 >=M1, the existence of a

setup of a presence flag will be judged (step 47).

[0172] If there is a setup of a presence flag in the judgment of step 47, it will be a value of standard valve flow coefficient 0. It reads (step 48). Here, as explained previously, valve flow coefficient is the coefficient of variation by the body motion of the measured vibration level.

[0173] In the judgment of step 47, if there is no setup of a presence flag, a presence flag will be set (step 49) and it will progress to step 48.

[0174] It is a value of standard valve flow coefficient 0 at step 48. After reading, calculation processing of coefficient of variation CVx2 is performed (step 50).

[0175] Next, it judges whether it is the stable presence condition that free medical treatment can be given by whether it is valve flow coefficient0 >=CVx2 (step 51). If it is valve flow coefficient0 >=CVx2, after performing presence posture automatic detection processing (step 52), body taking a seat, leaving, and presence detection processing are ended. valve flow coefficient0 < information [error] (3) processing reported to stabilize a posture if it is CVx2 with a display 89 or the voice information means 90 is performed (step 53), and it returns to step 40.

[0176] Hereafter, according to the flow chart shown in drawing 13 , the presence posture automatic detection processing subroutine of step 52 is explained.

[0177] (Presence posture automatic detection processing) A value of standard sigmaM1 and sigmaM2 are read first (step 61).

[0178] Next, oscillating detection sensor 86e performs measurement processing of the vibration level of the seat 3, and a measurement value is substituted for Msx1 (step 62). Here, with this operation gestalt, although oscillating detection sensor 86e is arranged to the seat 3, the detection shaft is arranged so that it may become the X-axis (direction which intersects perpendicularly with the seat and goes to a lower part from the upper part). moreover -- this oscillating detection sensor 86e -- free medical treatment of a motor etc. -- the high frequency oscillation from which vibration of a child's driving source is transmitted through the frames 13 and 7 of the massage machine 1 is detected. What is necessary is just to install oscillating detection sensor 86e in the spring 9 located in the lower layer of the cushion layer 8 of the seat 3, as shown in drawing 1 (a) in order to detect such high frequency oscillation.

[0179] Next, by the oscillating detection sensor, measurement processing of the vibration level of the back board section is performed, and a measurement value is substituted for Mbx1 (step 63). Here, like oscillating measurement of the seat, although the oscillating detection sensor is arranged in the back board section, the

detection shaft is arranged so that it may become the direction which intersects perpendicularly with the back board section. moreover, this oscillating detection sensor -- free medical treatment of a motor etc. -- the high frequency oscillation from which vibration of a child's driving source is transmitted through the frame of a massage machine is detected. What is necessary is just to install an oscillating detection sensor near the inner circumference edge of the back frame located in the lower layer of the cushion layer of the back board section, in order to detect such high frequency oscillation.

[0180] Next, presence posture automatic detection judging processing is performed by whether it is sigmaM2 >=Msx1+Mbx 1>=sigmaM1 (step 64).

[0181] In the judgment of step 64, if it is sigmaM2<Msx1+Mbx1, since it is outside application size like a child, a display 89 or the voice information means 90 will report the purport which cannot be presence posture judged (step 65), and presence posture automatic detection processing will be ended by twisting from contact pressure to the installation part of whether a user is absent and both the oscillating detection sensor, and adopting the special unstable way of sitting down.

[0182] In the judgment of step 64, if it is Msx1+Mbx 1< sigmaM1, since it is outside application size like [when a user's weight is too heavy], a display 89 or the voice information means 90 reports the purport which cannot be presence posture judged (step 66), and presence posture automatic detection processing is ended.

[0183] In the judgment of step 64, if it is sigmaM2 >=Msx1+Mbx 1>=sigmaM1, it will judge whether it is Msx1 >=Mbx1 (step 67).

[0184] In the judgment of step 67, if it is Msx1 >=Mbx1, it will judge with it being a reclining posture (step 68), and presence posture automatic detection processing will be ended.

[0185] In the judgment of step 67, if it is Msx1<Mbx1, it will judge whether it is Msx1 <<Mbx1 (step 69).

[0186] In the judgment of step 69, if it is Msx1 <<Mbx1, it will judge that the back is the posture which floated from the back board section (step 70), and presence posture automatic detection processing will be ended.

[0187] In the judgment of step 69, if it is not Msx1 <<Mbx1, it will judge with it being usually a posture (step 71), and presence posture automatic detection processing will be ended.

[0188] In above-mentioned presence posture automatic detection processing, if contact pressure is large in that the balance or magnitude of the contact pressure which acts on the installation part of the oscillating detection sensors 86d and 86e

established in the back board section 2 and the seat 3 is different according to a user's presence posture, and a list, criteria will be set as them using a vibration level being controlled.

[0189] Thus, not only the existence of presence of a user but presumption about the more detailed relative relation of the massage machine and the user with what kind of posture the user is at his desk is attained by detecting vibration of the same source of vibration by two or more oscillating detection sensors arranged to a different part.

[0190] (Form automatic detection processing) According to the flow chart shown in drawing 14 , the form automatic detection processing which detects a user's form automatically using oscillating information is explained hereafter. however, that it is the posture in which a presence posture can give free medical treatment, as a premise of this processing and free medical treatment ── it is required to turn on the power source of a child's driving source.

[0191] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 81).

[0192] next, free medical treatment ── the child location detecting element 69 ── free medical treatment ── a child's 18 location ── detecting (step 82) ── free medical treatment ── a child 18 judges whether it is in a criteria location (step 83). The standard spleen location [location / (location of the longitudinal direction the back board section's 2, or a user's ****** direction) / vertical] as a child's 18 criteria location for example, free medical treatment ── A width-of-face location (location of the direction which the back also hangs down, and the direction of a short hand or the back of the section 2 also hangs down, and intersects perpendicularly with a user's ****** along a section front face) can set up so that standard ******** and a location (location of the direction which the back also hangs down, intersects perpendicularly with section 2 front face, and projects) on the strength may turn into the minimum protrusion location. free medical treatment with this location strong [setting a criteria location as a standard spleen location] in the upper part of the waist ── although it is because it is the part which cannot sense a pain easily to a stimulus of a child, a setup of a criteria location is not restricted to this.

[0193] the judgment of step 83 ── setting ── free medical treatment ── if there is no child in a criteria location, it will be made to move to a criteria location (step 84), and will return to step 83. this operation gestalt ── free medical treatment ── although the criteria location judging of a child 18 is performed ── free medical treatment ── the time of termination ── automatic ── free medical treatment ── if it is made to perform automatic termination positioning processing in which a child 18 is returned to a

criteria location, this judgment processing is omissible.

[0194] the judgment of step 83 -- setting -- free medical treatment -- if a child 18 is in a criteria location -- free medical treatment -- a child 18 is driven by the beat oscillation mode (step 85).

[0195] Next, a value of standard Mm1 is read (step 86).

[0196] Next, by oscillating detection sensor 86a, measurement processing of a vibration level is performed and a measurement value is substituted for Mx3 (step 87). the free medical treatment as the low frequency source of vibration here driven by the beat oscillation mode -- oscillating detection sensor 86a in which a child's vibration was prepared by the head side edge section of a back board section frame detects. In this case, low frequency is about several Hertz in frequency.

[0197] next, the judgment of being Mx3**Mm1, i.e., free medical treatment of being a predetermined vibration level, -- a child proper judging on the strength is performed (step 88).

[0198] if it is Mx3<Mm1 in the judgment of step 88 -- free medical treatment -- a child location on the strength is made to raise by one step of control unit (step 89), and it returns to step 87.

[0199] if it is Mx3>Mm1 in the judgment of step 88 -- free medical treatment -- a child location on the strength is brought down by one step of control unit (step 90), and it returns to step 87.

[0200] if it is Mx3**Mm1 in the judgment of step 88 -- free medical treatment -- it judges whether the child 18 was moved in the upper location direction at a predetermined migration speed or a predetermined migration step (step 91), and it moved by the predetermined transfer unit (step 92).

[0201] In the judgment of step 92, if predetermined is not moving by the transfer unit, steps 91 and 92 are repeated until it moves to step 91 by return and the predetermined transfer unit.

[0202] In the judgment of step 92, if it is moving by the predetermined transfer unit, measurement of vibration and a migration location will be performed in the location moved by the predetermined transfer unit, and this measurement value will be substituted for MLx and Lx, respectively (step 93).

[0203] Next, measurement of a vibration level and a migration location is performed for every transfer unit location, and a measurement value is written in memory (step 94).

[0204] the free medical treatment from a vibration level measurement value performed for every transfer unit location -- envelope character recognition

processing of a vibration level to child migration length is performed (step 95).

[0205] Next, it judges whether it went through the location (spacing of the envelope of the upper and lower sides of a vibration level decreases rapidly) to which an envelope falls steeply in the envelope character recognition of the vibration level mentioned above (step 96).

[0206] In the judgment of step 96, if it has not gone through the location to which an envelope falls steeply, it returns to step 91.

[0207] In the judgment of step 96, if it has gone through the location to which an envelope falls steeply, it will judge whether only predetermined addition distance is moving from this steep fall location (step 97).

[0208] In the judgment of step 97, if it is not moving by predetermined distance from a steep fall location, it returns to step 91.

[0209] if only predetermined distance is moving from the steep fall location in the judgment of step 97 —— a steep fall location —— as the shoulder location L1 —— temporary registration —— carrying out (step 98) —— free medical treatment —— migration of a child 18 is suspended (step 99).

[0210] next, free medical treatment —— it judges whether the child 18 was moved in the bottom location direction at a predetermined speed or a predetermined migration step (step 100), and it moved by the predetermined transfer unit (step 101).

[0211] In the judgment of step 101, if predetermined is not moving by the transfer unit, steps 100 and 101 are repeated until it moves to step 100 by return and the predetermined transfer unit.

[0212] In the judgment of step 101, if it is moving by the predetermined transfer unit, measurement of a vibration level and a migration location will be performed in the location moved by the predetermined transfer unit, and this measurement value will be substituted for MLx and Lx, respectively (step 102).

[0213] Next, measurement of a vibration level and a migration location is performed for every transfer unit location, and a measurement value is written in memory (step 103).

[0214] the free medical treatment from an oscillating measurement value performed for every transfer unit location —— envelope character recognition processing of a vibration level to child migration length is performed (step 104).

[0215] Next, it judges whether it went through the location (spacing of the envelope of the upper and lower sides of a vibration level increases rapidly) where an envelope goes up steeply in the envelope character recognition of the oscillatory wave form mentioned above (step 105).

[0216] In the judgment of step 105, if it has not gone through the location where an envelope goes up steeply, it returns to step 100.

[0217] In the judgment of step 105, if it has gone through the location where an envelope goes up steeply, it will judge whether only predetermined addition distance is moving from this steep fall location (step 106).

[0218] In the judgment of step 106, if it is not moving by predetermined distance from a steep rise location, it returns to step 100.

[0219] In the judgment of step 106, if only predetermined distance is moving from the steep rise location, temporary registration of the steep rise location will be carried out as a shoulder location L2 (step 107).

[0220] Next, L0= (L1+L2) / 2 determine a shoulder location (step 108).

[0221] Next, the waist, a spleen, the angulus inferior scapulae, interscapulum width of face (********), ******, a head location, etc. are relatively determined and registered on the basis of the measured shoulder location (L0) (step 109a), and form automatic detection processing is ended.

[0222] thus, the vibrating free medical treatment —— when the back also gives a child and it is made to move in the vertical location direction along with the longitudinal direction of the section, the form which is the relative physical relationship of a user's each part of the body to a massage machine can be presumed from the change pattern of the oscillatory wave form detected by the oscillating detection sensor.

[0223] (Other form automatic detection processings) Although the location of each part of the body is determined in said processing after determining a shoulder location, according to drawing 15 and the flow chart shown in 16, the case where other processings are performed after shoulder spotting is explained below. Since step 108 is the same as that of the above-mentioned processing, the processing after step 108 is explained.

[0224] after determining a shoulder location at step 108 —— free medical treatment —— discernment processing of the envelope property of a vibration level over a child's migration length is performed (step 109b), and the change pattern of a vibration level judges A pattern or B pattern.

[0225] Here, drawing 17 (b) and (c) show typically vibration level change of A pattern and B pattern, respectively. an axis of abscissa —— a vibration level —— taking —— an axis of ordinate —— free medical treatment —— the variation rate to the upper part which meets the back from a child's 18 criteria location is taken. drawing 17 (a) —— free medical treatment —— the relation between a child and a user's form is shown. A pattern —— free medical treatment —— vibration level change in case **** is WA —— it is

-- the upper part from a criteria location -- free medical treatment -- the time of a child moving -- free medical treatment -- a child moves through a scapula top from an inferior angle of scapula. B pattern -- free medical treatment -- vibration level change in case **** is WB -- it is -- the upper part from a criteria location -- free medical treatment -- the time of a child moving -- free medical treatment -- a child moves through between scapulae on either side.

[0226] In step 109b, if the envelope property of a vibration level is A pattern, the steep rise location L3 (refer to <u>drawing 17</u>) of the envelope property by the scapula will be decided from this envelope property (step 110).

[0227] next, free medical treatment -- a child 18 is moved to a bottom location (step 111), and it judges whether it is L3 location (step 112).

[0228] In the judgment of step 112, if it is not L3 location, it will return to step 111 and migration will be repeated.

[0229] if it is L3 location in the judgment of step 112 -- this location -- free medical treatment -- migration of a child 18 is stopped (step 113).

[0230] Next, by the oscillating detection sensor, measurement processing of a vibration level is performed and the measurement value is substituted for Mxw (step 114).

[0231] next, free medical treatment -- a child 18 -- free medical treatment -- it judges whether it was made to move in the direction which narrows mutual width of face using a **** adjustment device (step 115), and only the predetermined transfer unit moved using the detection result of the width-of-face location detection means 84 (step 116).

[0232] In the judgment of step 116, if predetermined is not moving by the transfer unit, return and migration are repeated to step 115.

[0233] if only the predetermined transfer unit is moving in the judgment of step 116 -- free medical treatment -- **** judges whether it is the minimum location (WMIN) (step 117).

[0234] the judgment of step 117 -- setting -- free medical treatment -- if **** is not the minimum location, it will return to step 114 and oscillating measurement processing will be performed.

[0235] the judgment of step 117 -- setting -- free medical treatment -- if **** is the minimum location -- free medical treatment -- recognition processing of the envelope property of a vibration level over **** migration length is performed (step 118).

[0236] Next, it judges whether there is any location where a vibration level falls

steeply into the envelope property recognized in step 118 (step 119).

[0237] if there is a location to which an envelope property falls steeply in the judgment of step 119 — free medical treatment of this location — proper in **** WO — free medical treatment — it registers as **** (step 120) and it is a standard type (or free medical treatment — the object section is standard skinfold thickness) — ** — judging (step 121) — up to a spleen height location (it is a bottom wooden-clogs location of predetermined distance from an angulus-inferior-scapulae location (L3)) — free medical treatment — a child 18 is moved (step 122). change of a vibration level in case there is a location where an envelope property falls to drawing 18 (b) steeply — an axis of ordinate — a vibration level axis of abscissa — free medical treatment — **** is taken and it is shown typically. the free medical treatment at this time — the free medical treatment which the physical relationship of a child and a user's form has become like drawing 18 (a), and suited on the scapula — a child narrows width of face — be alike, follow and pass the inferior-angle-of-scapula section — by moving to interscapulum shows that the steep fall of an envelope property arises.

[0238] in the judgment of step 119, if there is no location to which an envelope property falls steeply, it will be a pycnic habit (or free medical treatment — the skinfold thickness of the object section is large) — ** — it judges (step 123) and proper — free medical treatment — **** WO is registered as WO= (WMIN+WTYP) / 2 (step 124), and it progresses to step 122.

[0239] as the standard position [location / L3 / angulus-inferior-scapulae] on the basis of the shoulder location LO (refer to drawing 17) if the envelope property of a vibration level is B pattern in the judgment of step 109b — registering (step 125) — the present free medical treatment — proper in **** WTYP — free medical treatment — it registers as **** WO (step 126), and progresses to step 126.

[0240] the vibration level after moving to a spleen height location (L4) in step 122, and free medical treatment — measurement processing of a child location on the strength — carrying out — the vibration level measurement value and free medical treatment — a child location on the strength is substituted for MP1 and P1 (step 127).

[0241] next, free medical treatment — a child location on the strength is gone up by predetermined [deltaP1] — making (step 128) — oscillating measurement processing — carrying out — the measurement value — MP2 — substituting — free medical treatment — the child location P2 on the strength — P2=P — 1+deltaP1 is substituted (step 129).

[0242] Next, it judges whether there was any vibration level change more than the

amount of conventions by whether it is MP2-MP1 >=alpha (alpha is the specified quantity) (step 130).

[0243] if it is MP2-MP1 >=alpha in the judgment of step 130 -- free medical treatment -- it judges whether the child was moved in the bottom location direction at a predetermined migration speed or a predetermined migration step (step 131), and only the predetermined transfer unit moved (step 132).

[0244] the judgment of step 130 -- setting -- MP2- if it is MP1<alpha -- free medical treatment -- a child's location on the strength is further raised by predetermined [deltaP2] (step 133), and it progresses to step 131.

[0245] In the judgment of step 132, if predetermined is not moving by the transfer unit, return and migration are repeated to step 131.

[0246] In the judgment of step 132, if only the predetermined transfer unit is moving, measurement of the vibration level in a predetermined transfer unit location and a migration location is performed, the measurement value will be substituted for MLx and Lx (step 134), vibration level measurement will be performed for every transfer unit location, and a measurement value will be written in memory (step 135).

[0247] next, free medical treatment -- recognition processing of the envelope property of the oscillatory wave form over child migration length is performed (step 136).

[0248] Next, it judges whether the envelope property of a vibration level has gone through the steep rise location (step 137).

[0249] In the judgment of step 137, if it has not gone through the steep rise location, return and migration are repeated to step 131.

[0250] In the judgment of step 137, if it has gone through the steep rise location, it will judge whether only a predetermined addition distance has passed from a steep rise location (step 138).

[0251] In the judgment of step 138, if only a predetermined addition distance has not passed, return and migration are repeated to step 131.

[0252] In the judgment of step 138, if only a predetermined addition distance has passed, the steep rise location L5 will be registered as a waist location (step 139).

[0253] next, free medical treatment -- a child's location on the strength is returned to an initial valve position (step 140). (a gone up part of deltaP1 or deltaP2 is lowered.)

[0254] free medical treatment -- if a child's location on the strength returns to an initial valve position -- free medical treatment -- a child's vertical location is moved to the spleen height location L4 (step 141), and form automatic detection processing is ended.

[0255] thus, the vibrating free medical treatment -- from the change pattern of the oscillatory wave form detected by the oscillating detection sensor, when moving a child in the width-of-face location direction which meets in the vertical location direction in alignment with the longitudinal direction of the back board section, and the direction of a short hand of the back board section the form which is the relative physical relationship of a user's each part of the body to a massage machine especially the scapula location, and the waist location could be presumed, and it doubled with a user's form in connection with this -- proper -- free medical treatment -- **** can also be set up automatically. moreover, the vibrating free medical treatment -- the condition of the change pattern of the oscillatory wave form detected by the oscillating detection sensor when it is made to move in the width-of-face location direction which the back also gives a child and meets in the direction of a short hand of the section to a user, i.e., free medical treatment, -- skinfold thickness, or the standard type or pycnic habit of the object section can also be presumed.

[0256] (Other form automatic detection processings) In drawing 14 and the processing shown in 15 and 16, like a pycnic type, when the skinfold thickness layer of the back is thick, shoulder location detection processing may not function normally. According to the flow chart shown in drawing 19 , the effective processing also in such a case is explained as other form automatic detection processings.

[0257] Only the parts of the processing which shows step 88 to drawing 14 , and the processing from which it differs after step 88 since it is the same are explained.

[0258] if it is Mx3**Mm1 in the judgment of step 88 -- free medical treatment -- it judges whether the child 18 was moved in the upper location direction at a predetermined migration speed or a predetermined migration step (step 151), and it moved by the predetermined transfer unit (step 152).

[0259] In the judgment of step 152, if predetermined is not moving by the transfer unit, it returns to step 151 and migration is repeated.

[0260] In the judgment of step 152, if only the predetermined transfer unit is moving, measurement of the vibration level in a predetermined transfer unit location and a migration location will be performed, and it will substitute for Mz (vibration level of Z shaft orientations), MLx (vibration level of X shaft orientations), and Lx (migration positional information) (step 153).

[0261] every [next,] transfer unit location -- an oscillating measurement value -- memory -- writing in (step 154) -- free medical treatment -- character recognition processing of the envelope of a vibration level to child migration length is performed

(step 155).

[0262] Next, the envelope property of the vibration level of X shaft orientations judges whether it went through the location to which it falls steeply (step 156).

[0263] if predetermined addition distance progress is carried out from the steep fall location in the judgment of step 156 -- this steep fall location -- as a shoulder location (L1) -- temporary registration -- carrying out (step 158) -- a standard type -- judging (step 159) -- free medical treatment -- migration of a child is suspended (step 160) and it progresses to step 100 of drawing 14 .

[0264] In the judgment of step 156, if it has not gone through the location to which the envelope property of the vibration level of X shaft orientations falls steeply, it judges whether the envelope property of the vibration level of Z shaft orientations is detecting the location which rises steeply (step 161).

[0265] If the envelope property of the vibration level of Z shaft orientations is detecting the location which rises steeply in the judgment of step 161 Judge this steep rise location to be a head location (LH), and it is registered (step 162). a pycnic habit -- judging (step 163) -- a head location (LH) -- a predetermined distance ***** location (L0=LH-deltaL) -- as a shoulder location -- registering (step 164) -- free medical treatment -- migration of a child is suspended (step 165).

[0266] next, free medical treatment -- up to the shoulder location (L0) which detected the child -- free medical treatment -- a child is moved (step 166) and it progresses to step 109.

[0267] thus, the vibrating free medical treatment -- when it is made to move in the vertical location direction which the back also gives a child and meets the longitudinal direction of the section, the form which is the relative physical relationship of a user's each part of the body to a massage machine especially a shoulder location, and a head location can be presumed from the change pattern of the oscillatory wave form detected by two or more oscillating detection sensors by which detection shafts differ. Moreover, a user's condition, i.e., a standard type or a pycnic habit, can also be presumed similarly.

[0268] (Proper free medical treatment on-the-strength automatic detection processing 1) proper according to the flow chart hereafter shown in drawing 2020 -- free medical treatment -- the processing which detects reinforcement automatically is explained.

[0269] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 171).

[0270] Next, if it is not in the presence condition judged and (step 172) stabilized

[whether it is in the stable presence condition which can give free medical treatment, and], it will return to step 18 of drawing 11 .

[0271] if it is in the stable presence condition -- free medical treatment -- a child location on the strength is set as the minimum location (Pmin) (step 173).

[0272] next, free medical treatment of the whole body -- the predetermined location representing reinforcement -- free medical treatment -- a child is moved -- making (step 174) -- free medical treatment -- the vibration level (MPx) in a child location (Px) on the strength is measured (step 175). the criterion of the whole body corresponding to the form (size, corpulence degree) at this time -- free medical treatment -- the free medical treatment in a representation location when the pattern on the strength shall be registered on memory -- adjustment on the strength -- free medical treatment of the whole body -- reinforcement can be adjusted. What is necessary is just to choose ******** (house *****) of interscapulum etc. as such a representation location.

[0273] next, free medical treatment -- a child location on the strength is made to raise by one step of control unit (step 176), and a vibration level is measured (step 177).

[0274] thus, character recognition processing of the envelope of the measurement value of the obtained vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pb) where a child location on the strength is before and after change, and a vibration level rises steeply (or fall)] -- free medical treatment -- it judges whether child reinforcement is too strong (step 178). the case where it detects here using high frequency oscillation, such as the source of vibration, -- free medical treatment -- if a child location on the strength is strengthened from Pmin and it goes, a vibration level will change in the direction shown in an arrow head in drawing 21 (a), and will rise steeply before and behind the steep change location Pb (Pmax -- free medical treatment -- the child on-the-strength maximum location is shown.). on the other hand -- free medical treatment -- the case where it detects using a child's beat vibration -- free medical treatment -- if a child location on the strength is strengthened from Pmin and it goes, a vibration level will change in the direction shown in an arrow head in drawing 21 (b), and will fall steeply before and behind the steep change location Pb.

[0275] the judgment of step 178 -- setting -- free medical treatment -- the case where child reinforcement is not too strong -- step 176 -- return and the case of being too strong -- free medical treatment -- a child location on the strength is brought down by one step of control unit (step 179), and a vibration level is measured

(step 180).

[0276] next, character recognition processing of the envelope of the measurement value of a vibration level to a vibration level -- carrying out -- free medical treatment -- a ***** [that it is the location (Pa) to which a child location on the strength is before and after change, and a vibration level falls steeply (or rise)] -- free medical treatment -- it judges whether child reinforcement is too weak (step 181). the case where it detects here using high frequency oscillation, such as the source of vibration, -- the free medical treatment from the steep change location Pb -- if a child location on the strength is brought down and it goes, a vibration level will fall steeply before and behind the steep change location Pa, as shown in drawing 21 (a). on the other hand -- free medical treatment -- the case where it detects using a child's beat vibration -- the free medical treatment from the steep change location Pb -- if a child location on the strength is brought down and it goes, a vibration level will rise steeply before and behind the steep change location Pa, as shown in drawing 21 (b).

[0277] the judgment of step 181 -- setting -- free medical treatment -- the the best for step 179, when too weak [there is no child reinforcement past / weak /, and], return and -- free medical treatment -- a child location (Pp) on the strength is computed by Pp= (Pa+Pb) / 2 (step 182), and the optimal -- free medical treatment -- the child location Pp on the strength is registered to memory (step 183), and this processing is ended. thus, free medical treatment proper with the easy configuration using an oscillating detection sensor if it carries out -- things can perform setting up reinforcement simple.

[0278] Here, processing including the procedure of step 173 to the step 181 is search mode.

[0279] (Proper free medical treatment on-the-strength automatic detection processing 2) proper according to the flow chart shown below at drawing 22 -- free medical treatment -- other processings which detect reinforcement automatically are explained.

[0280] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 191). At this time, a predetermined counter is set up with n= 0.

[0281] Next, if it is not in the presence condition judged and (step 192) stabilized [whether it is in the stable presence condition which can give free medical treatment, and], it will return to step 18 of drawing 11 .

[0282] if it is in the stable presence condition -- free medical treatment -- a child location on the strength is set as the minimum location (Pmin) (step 193).

[0283] next, free medical treatment of the whole body ── the predetermined location representing reinforcement ── free medical treatment ── a child is moved ── making (step 194) ── free medical treatment ── the vibration level (MPx) in a child location (Px) on the strength is measured (step 195).

[0284] next, free medical treatment ── a child location on the strength is made to raise by one step of control unit (step 196), and a vibration level is measured (step 197).

[0285] thus, character recognition processing of the envelope of the measurement value of the obtained vibration level to a vibration level ── carrying out ── free medical treatment ── a ****** [that it is the location (Pbn) where a child location on the strength is before and after change, and a vibration level rises steeply (or fall)] ── free medical treatment ── it judges whether child reinforcement is too strong (step 198). the case where it detects here using high frequency oscillation, such as the source of vibration, ── free medical treatment ── if a child location on the strength is strengthened from Pmin and it goes, a vibration level will change in the direction shown in an arrow head in drawing 23 (a), and will rise steeply before and behind the steep change location Pbn (Pmax ── free medical treatment ── the child on-the-strength maximum location is shown.). on the other hand ── free medical treatment ── the case where it detects using a child's beat vibration ── free medical treatment ── if a child location on the strength is strengthened from Pmin and it goes, a vibration level will change in the direction shown in an arrow head in drawing 23 (b), and will fall steeply before and behind the steep change location Pbn. it is shown in drawing 23 (a) and (b) ── as ── a vibration level ── free medical treatment ── the range of fluctuation narrows and goes by repeating modification of a location on the strength.

[0286] the judgment of step 198 ── setting ── free medical treatment ── the case where child reinforcement is not too strong ── step 196 ── return and the case of being too strong ── free medical treatment ── a child location on the strength is brought down by one step of control unit (step 199), and a vibration level is measured (step 200).

[0287] next, character recognition processing of the envelope of the measurement value of a vibration level to a vibration level ── carrying out ── free medical treatment ── a ****** [that it is the location (Pan) to which a child location on the strength is before and after change, and a vibration level falls steeply (or rise)] ── free medical treatment ── it judges whether child reinforcement is too weak (step 201). the case where it detects here using high frequency oscillation, such as the source of vibration,

-- the free medical treatment from the steep change location Pbn -- if a child location on the strength is brought down and it goes, a vibration level will fall steeply before and behind the steep change location Pan, as shown in drawing 23 (a). on the other hand -- free medical treatment -- the case where it detects using a child's beat vibration -- the free medical treatment from the steep change location Pbn -- if a child location on the strength is brought down and it goes, a vibration level will rise steeply before and behind the steep change location Pan, as shown in drawing 23 (b).

[0288] the judgment of step 201 -- setting -- free medical treatment -- when there is no child reinforcement past [weak], it is made as return at step 199, and in being too weak, it makes the value of a counter into n=n +1 (step 202).

[0289] next, the optimal -- free medical treatment -- a child location (Ppn) on the strength is computed by Ppn= (Pan+Pbn) / 2 (step 203).

[0290] Next, it judges whether it is n>=2 (step 204). If it becomes n<2 at this time, it will progress to step 195. if it is n>=2 on the other hand -- two or more fitness -- free medical treatment -- the average Pp (especially all over drawing, the bar is attached and displayed on the average Pp.) of the location Ppn on the strength -- Pp=(sigmaPpn)/n (sigma is the sum about n= 1 and 2 --n)

It asks "Be alike" (step 205).

[0291] next, multiple times are proper -- free medical treatment -- it judges whether it is in the range of fluctuation to the average Pp of the location Ppn on the strength by whether it is |Pp-Ppn|<=gamma using the predetermined fluctuation constant gamma (step 206). here, the optimal in the average Pp, if it is |Pp-Ppn|<=gamma -- free medical treatment -- it considers as a location on the strength, registers to memory (step 207), and this processing is ended. On the other hand, if it is |Pp-Ppn|>gamma, it will judge whether it is n>=4 (step 208), if it is n>=4, it will progress to step 207, and if it is n< 4, it will progress to step 195.

[0292] thus, free medical treatment proper with the easy configuration using an oscillating detection sensor if it carries out -- reinforcement can be set up simple. moreover, the free medical treatment same in this way -- proper in a child location -- free medical treatment -- the optimal [by a multiple-times deed and its average] in child on-the-strength location detection processing -- free medical treatment -- the free medical treatment which met liking of a user more when determining the child location on the strength -- reinforcement can be set up.

[0293] (Proper free medical treatment on-the-strength automatic detection processing 3) proper according to the flow chart shown below at drawing 24 -- free medical treatment -- other processings which detect reinforcement automatically are

explained.

[0294] this processing -- free medical treatment -- a child proper setup on the strength -- free medical treatment -- the child location 1 (shoulder location) and free medical treatment -- the child location 2 (interscapulum location) and free medical treatment -- it carries out in three places of the child location 3 (waist location).

[0295] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 211). this time -- free medical treatment -- initial setting of a child's predetermined location -- free medical treatment -- it considers as the child location 1.

[0296] Next, if it is not in the presence condition judged and (step 212) stabilized [whether it is in the stable presence condition which can give free medical treatment, and], it will return to step 18 of drawing 11 .

[0297] if it is in the stable presence condition -- free medical treatment -- a child location on the strength is set as the minimum location (Pmin) (step 213).

[0298] next, free medical treatment of the whole body -- the predetermined location representing reinforcement -- free medical treatment -- a child is moved -- making (step 214) -- free medical treatment -- the vibration level (MPx) in a child location (Px) on the strength is measured (step 215).

[0299] next, free medical treatment -- a child location on the strength is made to raise by one step of control unit (step 216), and a vibration level is measured (step 217).

[0300] thus, character recognition processing of the envelope of the measurement value of the obtained vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pb) where a child location on the strength is before and after change, and a vibration level rises steeply (or fall)] -- free medical treatment -- it judges whether child reinforcement is too strong (step 218).

[0301] the judgment of step 218 -- setting -- free medical treatment -- the case where child reinforcement is not too strong -- step 216 -- return and the case of being too strong -- free medical treatment -- a child location on the strength is brought down by one step of control unit (step 219), and a vibration level is measured (step 220).

[0302] next, character recognition processing of the envelope of the measurement value of a vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pa) to which a child location on the strength is before and after change, and a vibration level falls steeply (or rise)] -- free medical

treatment -- it judges whether child reinforcement is too weak (step 221).

[0303] the judgment of step 221 -- setting -- free medical treatment -- the the best for step 219, when too weak [there is no child reinforcement past / weak /, and], return and -- free medical treatment -- a child location (Pp) on the strength is computed by Pp= (Pa+Pb) / 2 (step 222).

[0304] next, free medical treatment -- a child -- free medical treatment -- it judges whether it is in the child location 1 (step 223). here -- free medical treatment -- a child -- free medical treatment -- Pp computed when it was in the child location 1 -- free medical treatment -- the child location 1 is the optimal -- free medical treatment -- as the child location Pp1 on the strength -- registering (step 224) -- free medical treatment -- a child predetermined location -- free medical treatment -- it changes into the child location 2 (step 225), and progresses to step 213. on the other hand -- free medical treatment -- a child -- free medical treatment -- if there is nothing in the child location 1 -- free medical treatment -- it judges whether it is in the child location 2 (step 226).

[0305] the judgment of step 226 -- setting -- free medical treatment -- a child -- free medical treatment -- Pp computed in the latest step 222 when it was in the child location 2 -- free medical treatment -- the child location 2 is the optimal -- free medical treatment -- as the child location Pp2 on the strength -- registering (step 227) -- free medical treatment -- a child location -- free medical treatment -- it changes into the child location 3 (step 228), and progresses to step 213. on the other hand -- free medical treatment -- a child -- free medical treatment -- Pp computed in the latest step 222 when there was nothing in the child location 2 -- free medical treatment -- the child location 3 is the optimal -- free medical treatment -- it registers as a child location Pp3 on the strength (step 229), and this processing is ended.

[0306] thus, free medical treatment proper with the easy configuration using an oscillating detection sensor if it carries out -- reinforcement can be set up simple. moreover, proper in this way in two or more locations -- free medical treatment -- performing child on-the-strength location measurement -- suitable free medical treatment -- a setup on the strength is attained. this processing -- free medical treatment -- although the child location is set as three places, naturally it comes out that you may set it as two places or four places or more.

[0307] (Proper free medical treatment on-the-strength automatic detection processing 4) proper according to the flow chart shown below at drawing 25 -- free medical treatment -- other processings which detect reinforcement automatically are

explained.

[0308] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 231). this time -- free medical treatment -- initial setting of a child's predetermined location is taken as interscapulum location L3'.

[0309] Next, if it is not in the presence condition judged and (step 232) stabilized [whether it is in the stable presence condition which can give free medical treatment, and], it will return to step 18 of drawing 11 .

[0310] if it is in the stable presence condition -- free medical treatment -- a child location on the strength is set as the minimum location (Pmin) (step 233).

[0311] next, free medical treatment of the whole body -- the predetermined location representing reinforcement -- free medical treatment -- a child is moved -- making (step 234) -- free medical treatment -- the vibration level (MPx) in a child location (Px) on the strength is measured (step 235).

[0312] next, free medical treatment -- a child location on the strength is made to raise by one step of control unit (step 236), and a vibration level is measured (step 237).

[0313] thus, character recognition processing of the envelope of the measurement value of the obtained vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pb) where a child location on the strength is before and after change, and a vibration level rises steeply (or fall)] -- free medical treatment -- it judges whether child reinforcement is too strong (step 238).

[0314] the judgment of step 238 -- setting -- free medical treatment -- the case where child reinforcement is not too strong -- step 236 -- return and the case of being too strong -- free medical treatment -- a child location on the strength is brought down by one step of control unit (step 239), and a vibration level is measured (step 240).

[0315] next, character recognition processing of the envelope of the measurement value of a vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pa) to which a child location on the strength is before and after change, and a vibration level falls steeply (or rise)] -- free medical treatment -- it judges whether child reinforcement is too weak (step 241).

[0316] the judgment of step 241 -- setting -- free medical treatment -- the the best for step 239, when too weak [there is no child reinforcement past / weak /, and], return and -- free medical treatment -- a child location (Pp) on the strength is computed by Pp= (Pa+Pb) / 2 (step 242).

[0317] next, the optimal -- free medical treatment -- a child vibration level on the strength is computed by MPp= (MPa+MPb) / 2 (step 243).

[0318] Next, Pp (L3') and MPp (L3') which were computed in step 242,243 are registered into memory (step 244).

[0319] next, free medical treatment -- the free medical treatment of the direction of a normal axis in alignment with a child's ****** -- the range (from a shoulder up to the waist) -- fixed free medical treatment -- the vibration level pattern information MPr for controlling (Lx) is beforehand stored in ROM etc. so that it may become reinforcement, and this is read (step 245).

[0320] Next, in order to adjust the read pattern information using the vibration level information MPp (L3') into which this time was registered, it is Gp=MPp (L3')/MPr (L3') about the oscillating pattern amplification degree Gp.

It computes "Be alike" (step 246). free medical treatment of the vibration level pattern information that MPr (L3') was read here -- it is a vibration level in child location L3'.

[0321] next, this user -- receiving -- free medical treatment -- vibration level pattern MPr' for controlling so that reinforcement becomes fixed is set up by MPr'=Gp*MPr (step 247).

[0322] next, free medical treatment -- a child location on the strength is set as the minimum location (Pmin) (step 248).

[0323] next, free medical treatment -- a child is moved to the start criteria location (for example, waist location which is a minimum) of the direction of a normal axis -- making (step 249) -- free medical treatment -- the child vertical direction location (Lx) and free medical treatment -- the vibration level (MPx) in a child location (Px) on the strength is measured (step 250).

[0324] Next, whether the measured vibration level MPx is mostly in agreement with vibration level pattern MPr' and MPx(Lx) **MPr' (Lx)

It judges whether it is **** (step 251).

[0325] step 251 -- setting -- MPx (Lx) -- if it is <MPr' (Lx) -- free medical treatment -- a child location on the strength is raised by one step of control unit (step 252), and it returns to step 251.

[0326] if it is MPx(Lx) >MPr' (Lx) in step 251 -- free medical treatment -- a child location on the strength is downed by one step of control unit (step 253), and it returns to step 251.

[0327] if it is MPx(Lx) **MPr' (Lx) in step 251 -- the free medical treatment after control -- the child location Ppx on the strength (Lx) is registered into memory (step

254).

[0328] next, free medical treatment -- it judges whether a child location is located in the halt location (for example, shoulder location which is an upper limit) of the direction of a normal axis (step 255). here -- free medical treatment -- if a child is in a halt location -- free medical treatment -- a child is stopped (step 256) and this processing is ended. on the other hand -- free medical treatment -- if there is no child in a halt location, it will be made to move in the direction of a normal axis by unit migration length (step 257), and will progress to step 250.

[0329] thus, free medical treatment proper with the easy configuration using an oscillating detection sensor if it carries out -- reinforcement can be set up. moreover, free medical treatment -- criteria [control / to which reinforcement becomes fixed] -- carrying out -- free medical treatment -- setting up reinforcement -- free medical treatment of parts other than a search mode activation part -- reinforcement can be set up simple and proper.

[0330] (Proper free medical treatment reinforcement and free medical treatment part automatic detection processing 5) proper according to the flow chart shown below at drawing 26 -- free medical treatment -- reinforcement and free medical treatment -- other processings which detect a part automatically are explained.

[0331] Since the procedure to step 250 is the same as that of drawing 25 , explanation is omitted.

[0332] the free medical treatment after performing oscillating measurement in step 250 -- it judges whether child position control on the strength is improper (step 258). here -- free medical treatment -- the condition that child position control on the strength cannot be performed -- free medical treatment -- after child adjustment on the strength -- a user -- further -- free medical treatment -- the body is moved in quest of strong modification, and the condition that contact pressure is not stabilized is pointed out.

[0333] step 258 -- setting -- free medical treatment -- if child position control on the strength is not improper, processing after step 251 of drawing 25 will be performed. on the other hand -- free medical treatment -- if child position control on the strength is improper -- free medical treatment -- a child location on the strength is made to raise by one step of control unit (step 259), and a vibration level is measured (step 260).

[0334] thus, character recognition processing of the envelope of the measurement value of the obtained vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pb) where a child location on the

strength is before and after change, and a vibration level rises steeply (or fall)] -- free medical treatment -- it judges whether child reinforcement is too strong (step 261).

[0335] the judgment of step 261 -- setting -- free medical treatment -- the case where child reinforcement is not too strong -- step 259 -- return and the case of being too strong -- free medical treatment -- a child location on the strength is brought down by one step of control unit (step 262), and a vibration level is measured (step 263).

[0336] next, character recognition processing of the envelope of the measurement value of a vibration level to a vibration level -- carrying out -- free medical treatment -- a ****** [that it is the location (Pa) to which a child location on the strength is before and after change, and a vibration level falls steeply (or rise)] -- free medical treatment -- it judges whether child reinforcement is too weak (step 264).

[0337] the judgment of step 264 -- setting -- free medical treatment -- the the best for step 262, when too weak [there is no child reinforcement past / weak /, and], return and -- free medical treatment -- a child location (Pp) on the strength is computed by Pp= (Pa+Pb) / 2 (step 265).

[0338] next, the optimal -- free medical treatment -- a child vibration level on the strength is computed by MPp= (MPa+MPb) / 2 (step 266).

[0339] Next, a vibration level is below a vibration level pattern for control (Lx)., i.e., MPp(Lx) <=MPr'
It judges whether it is **** (step 267).

[0340] if it is MPp(Lx) <=MPr' (Lx) in step 267 -- Lx -- free medical treatment -- it considers as a need part location, and registers with memory (step 268), and Pp (Lx) and MPp (Lx) are registered into memory (step 269). next, free medical treatment -- if a child location judges whether it is the halt location (for example, shoulder location which is an upper limit) of the direction of a normal axis (step 270) and is a halt location -- free medical treatment -- if a child is stopped (step 271), processing is ended and it is not a halt location -- free medical treatment -- a child is moved in the direction of a normal axis by unit migration length (step 272), and it returns to step 250.

[0341] whether if it is MPp(Lx) >MPr' (Lx) in step 267, a vibration level is farther [than the vibration level pattern for control] large, and MPp(Lx) >>MPr -- ' (Lx) --
It judges whether it is **** (step 273).

[0342] if it is MPp(Lx) >>MPr' (Lx) in step 273 -- Lx -- free medical treatment -- it registers with memory noting that it is an unnecessary part location (step 274), and

Pp (Lx) and MPp (Lx) are registered into memory (step 275), and it progresses to step 270.

[0343] if it is not MPp(Lx) >>MPr' (Lx) in step 273 —— Lx —— weak —— free medical treatment —— it registers with memory noting that it is an on-the-strength part location (step 276), and Pp (Lx) and MPp (Lx) are registered into memory (step 277), and it progresses to step 270.

[0344] thus, free medical treatment proper with the easy configuration using an oscillating detection sensor if it carries out —— reinforcement can be set up. moreover, free medical treatment —— criteria [control / to which reinforcement becomes fixed] —— carrying out —— free medical treatment —— setting up reinforcement —— free medical treatment of parts other than a search mode activation part —— reinforcement can be set up simple and proper. moreover, free medical treatment —— a need part location —— free medical treatment —— a stimulus —— impressing —— weak —— free medical treatment —— an on-the-strength part location —— a low stimulus —— free medical treatment and a short time, or a high speed —— free medical treatment —— carrying out —— free medical treatment —— every location, such as not giving free medical treatment to an unnecessary part location, —— free medical treatment —— making conditions differ —— efficient —— free medical treatment —— carrying out —— free medical treatment —— the fatigue can be prevented.

[0345] (Proper free medical treatment mode automatic selection processing) proper according to the flow chart shown below at drawing 27 —— free medical treatment —— mode automatic selection processing is explained.

[0346] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 281).

[0347] next, the form detected in pretreatment and free medical treatment —— a part and free medical treatment —— registration information, such as reinforcement, is read (step 282).

[0348] next, free medical treatment —— a need part judges whether they are three or more places (step 283).

[0349] step 283 —— setting —— free medical treatment —— a need part —— three or more places —— a certain case —— whole body section reinforcement —— free medical treatment —— mode processing is performed (step 284) and this processing is ended.

[0350] drawing 28 —— each —— free medical treatment —— free medical treatment with the mode —— a sequence is shown.

[0351] the whole body section (reinforcement) —— free medical treatment —— the free medical treatment in the mode —— a flush [that a sequence is slight first (stimulus

slighter than Pp)] —— free medical treatment is given for 3 minutes. this time —— free medical treatment —— a child —— the scapula bottom direction from the waist —— outwardness —— the waist to interscapulum —— passing —— ****** —— and it is made to move outward to **** direct shoulders next, a strong (stimulus of Pp) flush —— free medical treatment is given for 5 minutes. this time —— free medical treatment —— a child makes it move outward to **** direct shoulders Next, free medical treatment is given for 5 minutes by Pp stimulus rubbing. this time —— free medical treatment —— a child —— the shoulder from the waist —— ****** —— meeting —— a scapula top —— a passage —— the shoulder from the waist —— ****** —— meeting —— interscapulum —— a passage, next **** direct shoulders —— outwardness —— moving —— making . Next, free medical treatment is given for 5 minutes by Pp stimulus striking. this time —— free medical treatment —— a child —— the scapula bottom from the waist —— outwardness —— next, it is made to move through interscapulum along with ****** from the waist next, a flush [being slight (stimulus slighter than Pp)] —— free medical treatment is given for 8 minutes. this time —— free medical treatment —— a child —— the scapula bottom direction from the waist —— outwardness —— the waist to interscapulum —— passing —— ****** —— and it is made to move outward to **** direct shoulders

[0352] step 283 —— setting —— free medical treatment —— the case where a need part is less than three places —— first —— free medical treatment —— a need part judges whether it is the lumbar part (step 285).

[0353] step 285 —— setting —— free medical treatment —— the case where a need part is the lumbar part —— the lumbar part —— free medical treatment —— mode processing —— carrying out (step 286) —— next, free medical treatment —— it judges whether a need part is a scapula center section (step 287).

[0354] the lumbar part —— free medical treatment —— free medical treatment in the mode —— a flush [that a sequence is slight first (stimulus slighter than Pp)] —— free medical treatment is given for 2 minutes. this time —— free medical treatment —— a child —— the scapula bottom direction from the waist —— outwardness and the waist to interscapulum —— passing —— ****** —— and it is made to move outward to **** direct shoulders Next, free medical treatment is given for 3 minutes by Pp stimulus rubbing. this time —— free medical treatment —— a child moves the lumbar part along with ****** upwards from the bottom. Next, a beat stimulus of Pp stimulus is performed for 3 minutes. this time —— this time —— free medical treatment —— a child —— the scapula bottom from the waist —— outwardness —— next, it is made to move through interscapulum along with ****** from the waist next, a flush [being slight (stimulus slighter than Pp)] —— free medical treatment is given for 4 minutes. this time —— free

medical treatment —— a child makes it move in the scapula bottom direction from the waist to ****** through outwardness and the waist to interscapulum

[0355] step 285 —— setting —— free medical treatment —— if a need part is not the lumbar part, it will progress to step 287.

[0356] step 287 —— setting —— free medical treatment —— if a need part is a scapula center section —— a scapula center section —— free medical treatment —— mode processing —— carrying out (step 288) —— next, free medical treatment —— a need part judges whether it is a shoulder (step 289).

[0357] a scapula center section —— free medical treatment —— the free medical treatment in the mode —— a sequence —— first —— a strong (Pp stimulus) flush —— free medical treatment is given for 2 minutes. this time —— free medical treatment —— a child moves the scapula top to ****** outward to above from the bottom along with ****** from the waist. Next, free medical treatment is given for 3 minutes by Pp stimulus rubbing. this time —— free medical treatment —— a child makes it move to a bow so that a scapula may be met from the waist from the outside under a scapula to a shoulder along with ****** to ****** Next, free medical treatment is given for 3 minutes by Pp stimulus striking. this time —— this time —— free medical treatment —— a child —— the scapula bottom from the waist —— outwardness —— next, it is made to move through interscapulum along with ****** from the waist next, a beat [being slight (it being a slight stimulus from Pp)] —— free medical treatment is given for 3 minutes. this time —— this time —— free medical treatment —— a child —— the scapula bottom from the waist —— outwardness —— next, it is made to move through interscapulum along with ****** from the waist next, a flush [being slight (stimulus slighter than Pp)] —— free medical treatment is given for 4 minutes. this time —— free medical treatment —— a child moves the scapula top to ****** outward to above from the bottom along with ****** from the waist.

[0358] step 287 —— setting —— free medical treatment —— if a need part is not a scapula center section, it will progress to step 289.

[0359] step 289 —— setting —— free medical treatment —— the case where a need part is a shoulder —— a shoulder —— free medical treatment —— mode processing —— carrying out (step 290) —— next, free medical treatment —— a need part judges whether it is ******** (step 291).

[0360] a shoulder —— free medical treatment —— free medical treatment in the mode —— a sequence —— first —— being slight (stimulus slighter than Pp) —— it carries out for 2 minutes. this time —— free medical treatment —— a child makes it move downward along with **** direct shoulders Next, free medical treatment is given for 4 minutes by Pp

stimulus rubbing. this time —— free medical treatment —— a child makes it move downward along with **** direct shoulders Next, free medical treatment is given for 4 minutes by Pp stimulus striking. this time —— free medical treatment —— a child makes it move downward along with **** direct shoulders next, a flush [being slight (stimulus slighter than Pp)] —— free medical treatment is given for 4 minutes. this time —— free medical treatment —— a child makes it move downward along with **** direct shoulders

[0361] step 289 —— setting —— free medical treatment —— if a need part is not a shoulder, it will progress to step 291.

[0362] step 291 —— setting —— free medical treatment —— the case where a need part is ******** —— ******** —— free medical treatment —— mode processing —— carrying out (step 292) —— next, the whole body —— slight —— free medical treatment —— mode processing is performed (step 293) and processing is ended.

[0363] ******** —— free medical treatment —— the free medical treatment in the mode —— a flush [that a sequence is slight first (stimulus slighter than Pp)] —— free medical treatment is given for 2 minutes. this time —— free medical treatment —— a child moves ****** outward to above from the bottom. next, a strong (Pp stimulus) flush —— free medical treatment is given for 4 minutes. this time —— free medical treatment —— a child makes it move downward from a top along with ****** Next, free medical treatment is given for 4 minutes by Pp stimulus rubbing. this time —— free medical treatment —— a child makes it move downward from a top along with ****** next, a flush [being slight (stimulus slighter than Pp)] —— free medical treatment is given for 4 minutes. this time —— free medical treatment —— a child moves ****** outward to above from the bottom.

[0364] the whole body section (slight) —— free medical treatment —— the free medical treatment in the mode —— a flush [that a sequence is slight first (stimulus slighter than Pp)] —— free medical treatment is given for 3 minutes. this time —— free medical treatment —— a child —— the scapula bottom direction from the waist —— outwardness —— the waist to interscapulum —— passing —— ****** —— and it is made to move outward to **** direct shoulders next, a strong (stimulus of Pp) flush —— free medical treatment is given for 5 minutes. this time —— free medical treatment —— a child makes it move outward to **** direct shoulders next, slight (it is a slight stimulus from Pp) —— free medical treatment is given for 5 minutes by rubbing. this time —— free medical treatment —— a child —— the shoulder from the waist —— ****** —— meeting —— a scapula top —— a passage —— the shoulder from the waist —— ****** —— meeting —— interscapulum —— a passage, next **** direct shoulders —— outwardness —— moving ——

making . next, a beat [being slight (it being a slight stimulus from Pp)] —— free medical treatment is given for 5 minutes. this time —— free medical treatment —— a child —— the scapula bottom from the waist —— outwardness —— next, it is made to move through interscapulum along with ****** from the waist next, a flush [being slight (stimulus slighter than Pp)] —— free medical treatment is given for 8 minutes. this time —— free medical treatment —— a child —— the scapula bottom direction from the waist —— outwardness —— the waist to interscapulum —— passing —— ****** —— and it is made to move outward to **** direct shoulders

[0365] step 291 —— setting —— free medical treatment —— if a need part is not ********, it will progress to step 293.

[0366] thus, a form and free medical treatment —— a part and free medical treatment —— more proper free medical treatment can be performed by controlling using registration information, such as reinforcement.

[0367] (Proper free medical treatment mode automatic selection processing 2) according to the flow chart shown below at <u>drawing 29</u> , others are proper —— free medical treatment —— mode automatic selection processing is explained.

[0368] first, free medical treatment (demand) —— the dedication according to a part —— free medical treatment —— a program is read from ROM (step 301).

[0369] next, the free medical treatment from a form automatic detection result —— a child's successive range is determined (step 302).

[0370] next, free medical treatment —— the free medical treatment from an on-the-strength automatic detection result —— reinforcement is determined (step 303).

[0371] next, it judges whether it is a pycnic habit (or free medical treatment —— is the skinfold thickness of a part thick or not?) (step 304). if it is a pycnic habit here —— the free medical treatment at the time of a slight stimulus —— if reinforcement is set up more highly (step 305) and it is not a pycnic habit —— the free medical treatment at the time of a slight stimulus —— reinforcement —— slight lowness —— setting up (step 306) —— free medical treatment —— a child is moved to an initialization location (step 307).

[0372] next, free medical treatment (control) —— it processes and judges whether free medical treatment was completed (step 308).

[0373] In step 308, if free medical treatment is completed, processing will be ended. if free medical treatment is not completed in step 308 —— free medical treatment —— it judges whether modification of conditions is directed (step 309). while [for example,] pushing the predetermined switch —— a user —— free medical treatment —— operating changing the contact pressure to a child etc. —— free medical treatment —— the free

medical treatment changed when modification of conditions was attained and the switch was detached ―― it considers as a setup into which conditions are registered, and judges whether the predetermined switch is pushed here.

[0374] step 309 ―― setting ―― free medical treatment ―― if modification of conditions is directed ―― predetermined ―― free medical treatment ―― a child location ―― proper ―― free medical treatment ―― reinforcement and free medical treatment ―― automatic detection of a part etc. is processed (step 301) and it returns to step 309.

[0375] step 309 ―― setting ―― free medical treatment ―― if modification of conditions is not directed ―― free medical treatment ―― it judges whether registration of conditions is directed (step 311). (if it is said setup, is it no immediately after detaching a predetermined switch?)

[0376] step 311 ―― setting ―― free medical treatment ―― if registration of conditions is not directed, it returns to step 308.

[0377] step 311 ―― setting ―― free medical treatment ―― the information which re-registered the detection result in step 310 (step 312), and was re-registered when registration of conditions was directed ―― being based ―― free medical treatment of modification of setups etc. ―― reexamination processing of a program is performed (step 313) and it returns to step 308.

[0378] Here, the configuration of the switch mentioned already is explained. It is desirable to form a switch in the location on which the hand of the edge of an armrest is put at the massage machine shown in drawing 1 , although the armrest is not prepared. If it does in this way, a switch can be operated without changing a posture. Furthermore, the switch formed in an one hand side can be operated without moving a look to the direction of a switch to every three pieces then, and operability improves further. Or it also juxtaposes arrangement of a switch to three front side edge sides, various arrangement, such as juxtaposing two to a front side edge side, and preparing in one thumb side, is possible. It is not restricted to what was described above also about a setup of a switch. The autonomous-working mode in which conditions are set up automatically, and the manual operation mode set up by the manual are changed by an another switch or an another signal. for example, free medical treatment ―― namely, 1 set of three same switches ―― respectively ―― autonomous-working mode ―― free medical treatment ―― a halt/restart (or an emergency shut down ――) A condition add function is assigned. free medical treatment of a termination, termination, a restart function, a search mode initiation function, and search mode ―― the manual operation mode ―― free medical treatment ―― you may make it assign the change function of a child's control mode (vertical move mode and right-and-left move mode), a top, a right

translation directions function and the bottom, or a left translation directions function

[0379] (Free medical treatment automatic post process 1 of operation) the flow chart shown in <u>drawing 30</u> R> 0 below —— following —— free medical treatment —— the free medical treatment which terminates actuation automatically —— an automatic post process of operation is explained.

[0380] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 321). At this time, it sets with m= 0 with a predetermined counter.

[0381] first, free medical treatment (need) —— the dedication according to a part —— free medical treatment —— a program is read from ROM (step 322).

[0382] next, the free medical treatment from a form automatic detection result —— a child's successive range is determined (step 323).

[0383] next, free medical treatment —— the free medical treatment from an on-the-strength automatic detection result —— reinforcement is determined (step 324).

[0384] next, an initialization location —— free medical treatment —— a child is moved (step 325).

[0385] next, free medical treatment (control) —— processing —— carrying out (step 326) —— free medical treatment —— it judges whether it has gone through end time (step 327).

[0386] step 327 —— setting —— free medical treatment —— this processing will be ended if it has gone through end time.

[0387] step 327 —— setting —— yet —— free medical treatment —— if it has not gone through end time —— predetermined switch actuation etc. —— free medical treatment —— it judges whether modification of conditions is directed (step 328).

[0388] step 328 —— setting —— free medical treatment —— if modification of conditions is directed —— predetermined —— free medical treatment —— a child location —— proper —— free medical treatment —— reinforcement and free medical treatment —— part automatic detection etc. is processed (step 329) and it returns to step 328.

[0389] step 328 —— setting —— free medical treatment —— if modification of conditions is not directed —— free medical treatment —— if it does not judge and (step 330) direct whether modification registration of conditions is directed, it returns to step 326.

[0390] step 331 —— setting —— free medical treatment —— re-registration processing of the detection result in step 329 if modification registration of conditions is directed —— carrying out (step 331) —— re-registration information —— being based —— free medical treatment of modification of setups etc. —— reexamination processing of a program is

performed (step 332).

[0391] Next, the value m of said counter is set with m+1 (step 333).

[0392] next, free medical treatment -- the count of condition modification judges whether it is less than a count of predetermined (C1) by whether it is m<=C1 (step 334).

[0393] if it is m<=C1 in step 334 -- the remaining free medical treatment -- the reinforcement or time amount of processing -- a compaction setup -- carrying out (step 335) -- free medical treatment -- the free medical treatment from initiation to termination -- reinforcement and free medical treatment -- anticipation addition value (track record anticipation index) sigmaTPp of time amount is computed (step 336). Here, it is sigma TPp=sigma (alpha*tPp), and alpha is the weight set up according to the reinforcement of free medical treatment shown in Table 1, and tPp is the anticipation time amount of each free medical treatment.

[0394]

[Table 1]

if it is m>C1 in step 334 -- free medical treatment -- the count of condition modification judges whether they are two or more counts C of predetermined by whether it is C2<=m (step 337).

[0395] if it is C2<=m in step 337 -- the remaining free medical treatment -- an extended setup of the reinforcement or time amount of processing is carried out (step 338), and it progresses to step 336.

[0396] In step 337, if it is C2>m, it will progress to step 336.

[0397] the free medical treatment after computing sigmaTPp in step 336 -- it judges whether reinforcement and time amount anticipation addition value sigmaTPp exceed upper-limit sigmaTmax by sigma TPp>=sigma Tmax (step 339). here -- upper-limit sigmaTmax -- for example, the part of chisels, such as a shoulder, -- free medical treatment -- 10 minutes and the whole body -- in free medical treatment, it sets up

with 30 minutes.

[0398] step 339 -- free medical treatment -- if reinforcement and a time amount anticipation addition value are not over the upper limit, it returns to step 326.

[0399] step 339 -- free medical treatment -- if reinforcement and a time amount anticipation addition value are over the upper limit -- free medical treatment -- reinforcement and free medical treatment -- a period and free medical treatment -- the predetermined short time after changing a setup of time amount -- free medical treatment -- reinforcement -- gradually -- a fall and free medical treatment -- time amount -- gradually -- compaction or free medical treatment -- it sets up extending a period gradually etc. (step 340). If it does in this way, it can prevent that superfluous stress is added to a user by free medical treatment.

[0400] next, free medical treatment -- it judges whether reinforcement and time amount anticipation addition value sigmaTPp are over insurance upper-limit sigmaTmax' by sigma TPp>=sigma Tmax' (step 341). here -- free medical treatment -- the predicted value after setting modification [in / in reinforcement and time amount anticipation addition value sigmaTPp / step 340] -- it is -- insurance upper-limit sigmaTmax' -- for example, a part -- if it is free medical treatment -- 15 minutes and the whole body -- if it is free medical treatment, it will set up with 40 minutes.

[0401] step 341 -- setting -- free medical treatment -- if reinforcement and a time amount anticipation addition value are over the insurance upper limit, free medical treatment will be stopped (step 342) and this processing will be ended.

[0402] step 341 -- setting -- free medical treatment -- if reinforcement and a time amount addition value are not over the insurance upper limit, it returns to step 326.

[0403] (Free medical treatment automatic post process 2 of operation) the flow chart shown in <u>drawing 31</u> R> 1 below -- following -- free medical treatment -- other free medical treatment which terminates actuation automatically -- an automatic post process of operation is explained.

[0404] First, measurement preliminary treatments, such as reset of each component or initial setting, are performed (step 351). At this time, it sets with I= 0 with a predetermined counter.

[0405] first, free medical treatment (need) -- the dedication according to a part -- free medical treatment -- a program is read from ROM (step 352).

[0406] next, the free medical treatment from a form automatic detection result -- a child's successive range is determined (step 353).

[0407] next, free medical treatment -- the free medical treatment from an

on-the-strength automatic detection result -- reinforcement is determined (step 354).

[0408] next, an initialization location -- free medical treatment -- a child is moved (step 355).

[0409] next, free medical treatment (control) -- processing -- carrying out (step 356) -- free medical treatment -- it judges whether a user's posture fluctuation was during the period (step 357).

[0410] if there is posture fluctuation in step 357 -- the value I of said counter -- I+1 -- carrying out (step 358) -- free medical treatment -- it judges whether it has gone through end time (step 359).

[0411] In step 357, if there is no posture fluctuation, it will progress to step 359.

[0412] step 359 -- setting -- free medical treatment -- if it has gone through end time -- this processing -- ending -- free medical treatment -- if it has not gone through end time -- predetermined switch actuation etc. -- free medical treatment -- it judges whether modification of conditions is directed (step 360).

[0413] step 360 -- setting -- free medical treatment -- if modification of conditions is directed -- predetermined -- free medical treatment -- a child location -- proper -- free medical treatment -- reinforcement and free medical treatment -- part automatic detection etc. is processed (step 361) and it returns to step 360.

[0414] step 360 -- setting -- free medical treatment -- if modification of conditions is not directed -- free medical treatment -- if it does not judge and (step 362) direct whether modification registration of conditions is directed, it returns to step 356.

[0415] step 362 -- setting -- free medical treatment -- re-registration processing of the detection result in step 361 if modification registration of conditions is directed -- carrying out (step 363) -- re-registration information -- being based -- free medical treatment of modification of setups etc. -- reexamination processing of a program is performed (step 364).

[0416] next, free medical treatment -- the posture transaction count of the user in a period judges whether it is less than a count of predetermined by whether it is I<=d1 (step 365).

[0417] if it is I<=d1 in step 365 -- the remaining free medical treatment -- the reinforcement or time amount of processing -- a compaction setup -- carrying out (step 366) -- free medical treatment -- the free medical treatment from initiation to termination -- anticipation addition value sigmaTPp of time amount is computed (step 367). Here, it is sigma TPp=sigma (alpha*tPp), and alpha is the weight set up according to the stimulus reinforcement of free medical treatment shown in Table 1, and tPp is

the anticipation time amount of each free medical treatment.

[0418] if it is l>d1 in step 365 -- free medical treatment -- the posture transaction count of the user in a period judges whether it is more than count dof predetermined 2 by whether it is d2<=l (step 368).

[0419] if it is d2<=l in step 368 -- the remaining free medical treatment -- an extended setup of the reinforcement or time amount of processing is carried out (step 369), and it progresses to step 367.

[0420] In step 368, if it is d2>l, it will progress to step 367.

[0421] the free medical treatment after computing sigmaTPp in step 367 -- it judges whether reinforcement and time amount anticipation addition value sigmaTPp exceed upper-limit sigmaTmax by sigma TPp>=sigma Tmax (step 370). here -- upper-limit sigmaTmax -- for example, the part of chisels, such as a shoulder, -- free medical treatment -- 10 minutes and the whole body -- in free medical treatment, it sets up with 30 minutes.

[0422] step 370 -- free medical treatment -- if reinforcement and a time amount anticipation addition value are not over the upper limit, it returns to step 356.

[0423] step 370 -- free medical treatment -- if reinforcement and a time amount anticipation addition value are over the upper limit -- free medical treatment -- reinforcement and free medical treatment -- a period and free medical treatment -- after setting modification of time amount and a predetermined short time -- free medical treatment -- reinforcement -- gradually -- a fall and free medical treatment -- time amount -- gradually -- compaction or free medical treatment -- it sets up extending a period gradually etc. (step 371). If it does in this way, it can prevent that superfluous stress is added to a user by free medical treatment.

[0424] next, free medical treatment -- it judges whether reinforcement and time amount anticipation addition value sigmaTPp are over insurance upper-limit sigmaTmax' by sigma TPp>=sigma Tmax' (step 372). here -- free medical treatment -- the predicted value after setting modification [in / in reinforcement and time amount anticipation addition value sigmaTPp / step 371] -- it is -- insurance upper-limit sigmaTmax' -- for example, a part -- if it is free medical treatment -- 15 minutes and the whole body -- if it is free medical treatment, it will set up with 40 minutes.

[0425] step 372 -- setting -- free medical treatment -- if reinforcement and a time amount addition value are over the insurance upper limit, free medical treatment will be stopped (step 373) and this processing will be ended.

[0426] step 372 -- setting -- free medical treatment -- if reinforcement and a time

amount addition value are not over the insurance upper limit, it returns to step 356.

[0427] thus, the oscillating information acquired by the oscillating detection sensor -- using -- free medical treatment -- a sequence -- including -- free medical treatment -- the massage machine which can offer more proper free medical treatment simple with an easy configuration is realizable by setting up conditions.

[0428] (2nd operation gestalt) The massage machine concerning the 2nd operation gestalt of this invention is explained.

[0429] The massage machine 101 concerning this operation gestalt is a bed type thing. The massage device 102 is built in the interior of the bed which supports the user who lies as shown in drawing 32 . Drawing 33 is the perspective view showing the bed frame 103 which supports the massage device 102.

[0430] Since the internal configuration of the massage machine 101 including the massage device 102 is the same as that of the 1st operation gestalt, explanation is omitted.

[0431] As shown in drawing 32 , the massage machine 101 of an abbreviation rectangular parallelepiped configuration equips the interior of the sheathing section 104 containing a cushion layer (un-illustrating) with the bed frame 103 which supports the body of the sheathing section 104 and a user. The massage device 102 is arranged at the opening 105 of the rectangle with which the upper part of the bed frame 103 was established in nothing and the center section in the abbreviation rectangle along a bed top face. the rise-and-fall shaft 108 which the rack 106 is formed in the flank of the bed frame 103 at the longitudinal direction, and was prepared in the main device section 107 of the massage device 102 -- rubbing -- business -- it gears with the pinion 110,111 fixed to the shaft 109. The foot side of a frame 103 is grounded by the support saddle 112,112 which supports the bed frame 103 stably, and the head side is grounded through the oscillating absorption section 113,113 which consists of an oil pressure (pneumatic pressure) suspension. The oscillating absorption section 113 may be formed with a spring, rubber, etc. that what is necessary is just to form by the member in which oscillating absorption is possible. free medical treatment -- a child 114 and the rise-and-fall shaft 108 to which the main device section 107 equipped with driving source 115 grade extends in the direction of a short hand -- rubbing -- business -- it is supported by the frame 103 through the pinion 110,111 with which the edge of a shaft 109 was equipped, and both-way migration is carried out at the longitudinal direction of a bed by rotating the pinion 110 which gears on the rack 106 of the flank of the bed frame 103. free medical treatment -- although the child 114 has projected to the bed top-face side through the slit of the sheathing section 104

which is not illustrated and it has come to be able to carry out direct contact at a user, you may make it contact a user indirectly through a deformable covering member like cloth or leather

[0432] The oscillating detection sensor 116 is attached in the inferior surface of tongue by the side of the head of the bed frame 103 upper part with this operation gestalt. The bed frame 103 equips a foot side with the support saddle 112 which can be supported stably, equips a head side with the oscillating absorption section 113, and it is constituted so that it may be in a cantilever condition. For this reason, in the head side edge section, the vibration level of the arrow-head PQ direction becomes large, and, as for the oscillating detection sensor 116 formed here, vibration can be detected easily.

[0433] this operation gestalt -- also setting -- the 1st operation gestalt -- the same -- the driving sources 115, such as a motor, and free medical treatment -- by detecting vibration by the impact which a child's 114 actuation or user gives by the oscillating detection sensor 116 taking a seat of a user and a deseat -- and proper [detection / presence /, detection / presence posture automatic /, detection / form automatic / and] -- free medical treatment -- on-the-strength automatic detection and free medical treatment -- proper [detection / part automatic / and] -- free medical treatment -- mode automatic selection and free medical treatment -- processing of automatic termination of operation etc. is possible.

[0434] (3rd operation gestalt) The massage machine applied to the 3rd operation gestalt of this invention based on drawing 34 is explained.

[0435] The sign same about the same configuration as the 1st operation gestalt is attached, and explanation is omitted.

[0436] The massage machine 201 concerning this operation gestalt forms the vibration generator system 202 which generates vibration which does not contribute to free medical treatment in the same massage machine 1 as the 1st operation gestalt. such a vibration generator system -- free medical treatment -- although conditions, such as vibration frequency, can be suitably set up since what is necessary is just to vibrate independently with actuation, what produces high frequency oscillation with minute extent as which a user does not sense vibration etc. is desirable. As a vibration generator system 202, although a motor, a solenoid, a piezo-electric vibration, etc. can be used, it is not restricted to this, for example. Although the back also hangs down a vibration generator system 202 and it can be attached in the outside of the section frame 13, the seat frame 7, and the leg frame 10 as shown in drawing, an attachment part is not restricted to such a part. What is necessary is just to choose

suitably according to the location of an oscillating detection sensor, the class of information to acquire by detection of oscillating information, etc.

[0437] Drawing 35 is the block diagram showing the internal configuration of the massage machine 201.

[0438] With this operation gestalt, it has the independent oscillating generating section 203 as the source of vibration which became independent of free medical treatment. The independent oscillating generating section 203 consists of a vibration generator system 202 which mainly generates vibration which does not participate in free medical treatment, and the control circuit section 204 which controls this vibration generator system 202, and controls vibration of a vibration generator system based on the information from CPU61. A vibration generator system 203 is constituted so that it can vibrate by two or more oscillation modes which have a frequency, a different vibration level, or the different oscillating direction, and you may make it change the oscillation mode containing the oscillating pattern which is the combination in these condition or its time series in the control circuit section 204. Power is supplied to the independent oscillating generating section 203 from the power supply section 62, and the switch which is intermittent in the electric power supply to the independent oscillating generating section 203 with the signal from CPU61 is formed.

[0439] such free medical treatment -- if actuation and the source of vibration which vibrates independently are established, the frequency condition of a vibration level, a frequency, or the oscillating direction can be set up according to information to presume from oscillating detection or oscillating information beforehand. Therefore, more various or the good oscillating information on a S/N ratio can be offered more.

[0440] (4th operation gestalt) The massage machine applied to the 4th operation gestalt of this invention based on drawing 36 is explained.

[0441] The sign same about the same configuration as the 1st operation gestalt is attached, and explanation is omitted.

[0442] the 1st operation gestalt -- free medical treatment -- a child 18 -- operating -- *********(ing) -- stroking -- a beat -- it rubs -- each -- the massage machine 301 applied to this operation gestalt although free medical treatment is given -- vibration -- free medical treatment -- free medical treatment is given by vibration of the vibrator as a means.

[0443] The main control section including control circuits, such as the sheathing section 16 of the massage machine 301 concerning drawing 36 and this operation gestalt and the back frame 15, a spring 9, and the below-mentioned CPU, etc. is

removed, the back also hangs down, and each frames 13, 7, and 10 of the section, the seat, and the leg are shown. The vibrator 303 supported by the center section of four fixed means 302a, 302b, 302c, and 302d prolonged in a radial is formed in the head side of the back board section frame 13. Similarly the inside by the side of the waist of the back board section frame 13, the inside of a seat frame, and inside a leg frame The vibrator 305,307,308 supported by the center section (four fixed means 304a–304d prolonged in a radial, 306a–306d, and 308a–308d) is formed, respectively. Although a spring or a pipe can constitute a fixed means, it is not restricted to this. what is necessary be to choose suitably the oscillating detection sensor which be illustrate according to the class of oscillating information and the property of an oscillating detection sensor which should be detect , and just to attach it , although it can attach in the medial surface of the spring which the back also hung down and be prepared in the seat frame the longitudinal direction lateral surface of the head of the section frame 13 , the direction lateral surface of a short hand , and near the inner circumference edge of a back frame like the 1st operation gestalt , and a leg frame etc.

[0444] Drawing 37 is the block diagram showing the outline of the internal configuration of the massage machine 301. The same sign is used for the same configuration as the 1st operation gestalt.

[0445] free medical treatment [in / at this operation gestalt / the 1st operation gestalt] –– the vibrator mechanical component 310 is formed instead of the child mechanical component. The 1st vibrator control circuit section 311 which controls vibrator 303,304,305,306 based on the information from CPU61, the 2nd vibrator control circuit section 312, the 3rd vibrator control circuit section 313, and the 4th vibrator control circuit section 314 are formed in the vibrator mechanical component 310. Moreover, the vibrator drive switch 315 which is intermittent in the electric power supply to vibrator with the signal from CPU is formed. You may make it change the oscillation mode containing the oscillating pattern of vibrator 303–306 which either is constituted at least and is the combination in these condition or its time series in the control circuit sections 311–314 so that it can vibrate by two or more oscillation modes which have a frequency, a different vibration level, or the different oscillating direction.

[0446] Also in this operation gestalt, information, such as a contact condition of a user and massage machine including taking a seat and a deseat and relative physical relationship over the massage machine like a user's each part of the body, can be presumed by detection of the oscillating information by the oscillating detection sensor. In addition to this, information, such as physiological information, such as an

installation condition to the installation side of for example, a massage machine, an operating state of equipment, and skinfold thickness of a user's body predetermined part, is acquired from oscillating information. If the information presumed from oscillating information is not restricted to these, and constitutes the frequency condition of a system and the change can detect as oscillating information, it can be presumed by detection of oscillating information.

[0447] With this operation gestalt, although vibrator 303-306 is fixed to a frame, the vibrator 303 of the back board section 2 or 304 may be supported like the 1st operation gestalt so that it may move in the ****** direction, the direction which intersects perpendicularly with ****** along with the back board section 2, or the direction which intersects perpendicularly with the back board section 2. You may prepare movable similarly about the vibrator 305,306 currently supported by the seat frame 7 and the leg frame 10.

[0448] Moreover, also in this operation gestalt, the source of vibration which does not participate in the free medical treatment other than vibrator is established, and, naturally you may make it detect vibration by this source of vibration by the oscillating detection sensor.

[0449] moreover, the free medical treatment explained with the vibrator explained with this operation gestalt, and the 1st operation gestalt -- you may make it have both the massage devices using a child For example, the leg frame 10 of the 1st operation gestalt can be equipped with the vibrator of this operation gestalt.

[0450] (5th operation gestalt) The relaxation chair as relaxation equipment applied to the 5th operation gestalt of this invention based on <u>drawing 38</u> is explained.

[0451] <u>Drawing 38</u> is the side elevation in which the back also hung down, having removed sheathing and the cushion layer of the section 2, and the back also hung down, and having fractured the section frame 13 in part and having shown it. The sign same about the same configuration as the 1st operation gestalt is attached, and explanation is omitted.

[0452] The relaxation chair 401 concerning this operation gestalt be equip with the back board section frame 13 , the seat frame 7 , the leg frame 10 , the back frame 15 , the sheathing section that be illustrate , and a cushion layer like the massage machine concerning the 1st operation gestalt (what is necessary be to choose a suitable part and just to install , although omit on drawing also about the main control section and the actuation switch section 67 containing the below-mentioned CPU61 grade) . The relaxation chair 401 has formed the air bag 402 in the center section of the back board section frame 13 (the detail of the supporting structure of an air bag 402 is

omitted on drawing.). The back board section 2 front-face side of an air bag 402 is projected from the hole of back frame 15 center, and the vibration generator system 403 which vibrates an air bag 402 is formed in the tooth-back side of an air bag 402. By vibrating an air bag 402 with a vibration generator system 403, the relaxation effectiveness which softens corporal or mental stress is given to the user who leaned on the back board section 2.

[0453] <u>Drawing 39</u> is the block diagram showing the internal configuration of the relaxation chair 401.

[0454] Except for the configuration of the block diagram concerning the 1st operation gestalt, and the relaxation operation section, since it is the same, explanation is omitted about the same configuration.

[0455] The relaxation operation section 404 consists of an air bag 402 as a relaxation means, vibration generator systems (driving source) 403, such as a solenoid, a loudspeaker, or a piezoelectric transducer, and the control circuit section 405 that controls this vibration generator system 403, and the control circuit section 405 controls a vibration generator system 403 based on the information from CPU61. Power is supplied to the vibration generator system 403 from the power supply section 62, and the relaxation operation section switch 406 which is intermittent in the electric power supply to a vibration generator system 403 with the signal from CPU61 is formed.

[0456] What is necessary is to choose especially an oscillating detection sensor suitably according to the class of oscillating information and the property of an oscillating detection sensor which should be detected, and just to attach it, although it can attach in the medial surface of the spring which the back also hung down and was prepared in the seat frame the longitudinal direction lateral surface of the head of a section frame, the direction lateral surface of a short hand, and near the inner circumference edge of a back frame although not illustrated, and a leg frame etc.

[0457] Also in this operation gestalt, taking a seat of a user, a deseat and presence detection, presence posture automatic detection, form automatic detection, etc. are possible by detecting vibration by the impact which actuation or the user of a vibration generator system 403 and an air bag 402 gives by the oscillating detection sensor like the 1st operation gestalt. here -- an air bag 402 -- free medical treatment -- the relaxation means corresponding to a means -- it is -- CPU61 -- free medical treatment -- it is a relaxation control means corresponding to a control means. By controlling a relaxation means based on said detection result, proper relaxation is realizable simple.

[0458] (6th operation gestalt) The relaxation chair applied to the 6th operation gestalt of this invention based on drawing 40 is explained.

[0459] The sign same about the same configuration as the 5th operation gestalt is attached, and explanation is omitted.

[0460] The relaxation chair 501 concerning this operation gestalt is equipped with the control valve 503 which discharges the air in the pump 502 filled up with air in [other than a vibration generator system 403] an air bag 402, and an air bag 402, and the temperature control section 504 which controls the temperature of the air in an air bag 402 in a list. The pump 502 and the control valve 503 were controlled, and while giving the relaxation effectiveness by expanding and shrinking an air bag 402, the relaxation effectiveness is given also by controlling the temperature of the air in an air bag 402.

[0461] Drawing 41 is the block diagram showing the internal configuration of a relaxation chair.

[0462] Explanation is omitted about the same configuration as the block diagram concerning the 5th operation gestalt.

[0463] With this operation gestalt, the temperature control section 504 is formed in the pumping control circuit section 505 list which controls a pump 502 and a control valve 503, and these in the relaxation operation section 404. The pumping control circuit section controls a pump 502 and a control valve 503 based on the information from CPU61, and in order to give the relaxation effectiveness, it expands and shrinks an air bag 402. The vibration by expansion and contraction of this air bag 402 acts also as the source of vibration. Moreover, the relaxation chair 501 is equipped with the temperature control section 504 which consists of the heating means 506, the cooling means 507, the temperature detection means 508, and the thermal control circuit section 509 of an air bag 402. The thermal control circuit section 509 controls the temperature in an air bag 402 by the heating means 507 and the cooling means 508 based on the detection result of the temperature detection means 508 according to the information from CPU61. Moreover, from a power supply section 62, power is supplied also to a vibration generator system 403, a pump 502, a control valve 503, and the temperature control section 504.

[0464] Taking a seat of a user, a deseat and presence detection, presence posture automatic detection, form automatic detection, etc. are possible by detecting vibration by the impact which actuation or the user of a vibration generator system 403 and an air bag 402 gives vibration by expansion and contraction of an air bag 402 like the 5th operation gestalt except for the point which can be used as the source of

vibration by the oscillating detection sensor. here -- an air bag 402 -- free medical treatment -- the relaxation means corresponding to a means -- it is -- CPU61 -- free medical treatment -- it is a relaxation control means corresponding to a control means. By controlling a relaxation means based on said detection result, proper relaxation is realizable simple.

[0465] (7th operation gestalt) The relaxation chair applied to the 7th operation gestalt of this invention based on drawing 42 is explained.

[0466] The sign same about the same configuration as the 6th operation gestalt is attached, and explanation is omitted.

[0467] Unlike the 6th operation gestalt, the relaxation chair 601 concerning this operation gestalt is equipped with the liquid bag 602 which held liquids, such as water, in the center of the back board section 2. The tooth back of this liquid bag 602 is equipped with a vibration generator system 403, vibration is given to the liquid in the liquid bag 602, and the relaxation effectiveness is given. Although the 6th operation gestalt explained, an ultrasonic vibrator is used and you may make it give impulsive vibration source to the liquid bag 602 otherwise as a vibration generator system 403. moreover, the control valve 604 opened and closed in order to make a liquid discharge in a relaxation chair from the inside of the pump 603 for sending in a liquid in the liquid bag 602 and the liquid bag 602 is formed -- in addition, the temperature control section 504 which controls the temperature of the liquid in the liquid tank 605 which holds a liquid, and the liquid tank 605 is formed. The heating means 506, the cooling means 507, and the temperature detection means 508 are formed in the temperature control section 504. He is trying to control the temperature of the liquid in the liquid bag 602 by controlling a pump 603 and a control valve 604, and circulating the liquid which is held in the liquid tank 605 and by which temperature control was carried out between the liquid bags 602.

[0468] Except for the point that the circulation control circuit section which controls circulation of the liquid bag 602 and a liquid instead of an air bag 402 and the pumping control circuit section 505 is used in the block diagram shown in drawing 41 , since the internal configuration of the relaxation chair 601 concerning this operation gestalt is the same, it omits explanation.

[0469] Taking a seat of a user, a deseat and presence detection, presence posture automatic detection, form automatic detection, etc. are possible by detecting vibration by the impact which actuation or the user of a vibration generator system 403 and the liquid bag 602 gives like the 5th operation gestalt by the oscillating detection sensor with this operation gestalt.

[0470] (8th operation gestalt) The massage machine and relaxation chair which are applied to the 8th operation gestalt of this invention based on drawing 43 are explained.

[0471] The configurations of the relaxation chair applied to the operation gestalt of the 5th thru/or 7 at the massage machine list which this operation gestalt requires for the operation gestalt of the 1st, and 3 and 4, and a seat frame differ. By the back hanging down, since the device of a frame and others is the same as said operation gestalt about the section 2 and the leg 4, only a frame is shown in drawing 43 and explanation is omitted about the part which has the same configuration.

[0472] As shown in drawing 43 , the seat frame 802 is supported by the susceptor section 803 of the abbreviation square prepared on four support saddles 6 on the installation section 5. The seat frame 802 is supported on the susceptor section 803 by the oscillating absorption section 804 which is Doshisha University mostly and was prepared in right-and-left both sides at the edge by the side of the leg 4 with the susceptor section 803, and is supported by the arm 805 of the right-and-left both sides set up by the susceptor section 803 free [rocking] at the edge by the side of the back board section 2.

[0473] The back board section frame 13 is supported by the seat frame 802 free [rocking], and the leg frame 10 is supported by the susceptor section 803 free [rocking].

[0474] Since the seat frame 802 has a cantilever structure, as for a massage machine and a relaxation chair equipped with the frame 801 of such structure, the vibration level of the seat frame 802 in the edge by the side of the leg becomes large. Therefore, even if it does not arrange an oscillating detection sensor to the spring 9 prepared in the seat frame 7 like said operation gestalt, oscillating information is easily acquirable by attaching an oscillating detection sensor in seat frame 802 the very thing.

[0475] With this operation gestalt, although the seat frame is supported on the susceptor section, it is not restricted to such a configuration that what is necessary is just the configuration that a seat frame is supported by the cantilever structure.

[0476]

[Effect of the Invention] As mentioned above, as explained, according to this invention, the massage machine which can realize the optimal massage for an individual simple with an easy configuration can be offered.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Drawing 1 (a) is the perspective view showing the outline configuration inside the massage machine concerning the 1st operation gestalt of this invention, and drawing 1 (b) is the side elevation showing the condition that the user sat down in this massage machine.

[Drawing 2] Drawing 2 is the side elevation showing location change of the main device section of the massage machine concerning the 1st operation gestalt.

[Drawing 3] the side elevation in which drawing 3 (a) shows the beat actuation related part of the main device section of a massage device ── it is ── drawing 3 (b) ── free medical treatment ── it is a side elevation explaining the actuation to a child's user.

[Drawing 4] drawing 4 (a) ── free medical treatment of the main device section of a massage device ── the side elevation showing a child on-the-strength adjustment device related part ── it is ── drawing 4 (b) ── free medical treatment ── it is a side elevation explaining the location change to a child's user.

[Drawing 5] the front view in which drawing 5 (a) shows the flush actuation related part of the main device section of a massage device ── it is ── drawing 5 (b) ── free medical treatment ── it is drawing explaining the actuation to a child's user.

[Drawing 6] the front view in which the main device section of a massage device rubbing drawing 6 (a), and showing a relation part of operation ── it is ── drawing 6 (b) ── free medical treatment ── it is drawing explaining the actuation to a child's user.

[Drawing 7] Drawing 7 is the block diagram showing the outline of the internal configuration of the massage machine concerning the 1st operation gestalt.

[Drawing 8] drawing 8 ── vibration level change of X-axis Y-axis Z shaft orientations, and free medical treatment ── it is drawing showing the relation of the pressure variation a child's contact section.

[Drawing 9] Drawing 9 is drawing showing the relation of relative relation change of vibration level change and the user of X-axis Y-axis Z shaft orientations, and a massage machine.

[Drawing 10] Drawing 10 is a flow chart which shows the Maine processing of the massage machine concerning the 1st operation gestalt.

[Drawing 11] Drawing 11 is a flow chart explaining body taking a seat and the deseat in the case of turning on the power source of a driving source after taking-a-seat detection, and presence detection processing.

[Drawing 12] Drawing 12 is a flow chart explaining body taking a seat and the deseat in the case of turning on the power source of a driving source before taking a seat, and presence detection processing.

[Drawing 13] Drawing 13 is a flow chart explaining a presence posture automatic detection processing subroutine.

[Drawing 14] Drawing 14 is a flow chart explaining the form automatic detection processing which detects a user's form automatically using oscillating information.

[Drawing 15] Drawing 15 shows a part of flow chart explaining the processing in the case of performing other processings after shoulder spotting.

[Drawing 16] Drawing 16 shows a part of flow chart explaining the processing in the case of performing other processings after shoulder spotting.

[Drawing 17] drawing 17 (a) -- free medical treatment -- the relation between a child and a user's form is shown and drawing 17 (b) and (c) are drawings showing typically vibration level change of A pattern and B pattern, respectively.

[Drawing 18] drawing 18 (a) -- free medical treatment -- change of a vibration level in case the physical relationship of a child and a user's form is shown and drawing 18 (b) has the location to which an envelope property falls steeply -- an axis of ordinate -- a vibration level axis of abscissa -- free medical treatment -- it is drawing which takes **** and is shown typically.

[Drawing 19] Drawing 19 is a flow chart explaining other form automatic detection processings.

[Drawing 20] drawing 20 is proper -- free medical treatment -- it is a flow chart explaining the on-the-strength automatic detection processing 1.

[Drawing 21] drawing 21 (a) and (b) -- free medical treatment -- it is the graph which shows the relation between a child location on the strength and a vibration level.

[Drawing 22] drawing 22 is proper -- free medical treatment -- it is a flow chart explaining the on-the-strength automatic detection processing 2.

[Drawing 23] drawing 23 (a) and (b) -- free medical treatment -- it is the graph which shows the relation between a child location on the strength and a vibration level.

[Drawing 24] drawing 24 is proper -- free medical treatment -- it is a flow chart explaining the on-the-strength automatic detection processing 3.

[Drawing 25] drawing 25 is proper -- free medical treatment -- it is a flow chart explaining the on-the-strength automatic detection processing 4.

[Drawing 26] drawing 26 is proper -- free medical treatment -- on-the-strength automatic detection processing and free medical treatment -- it is a flow chart explaining the part location automatic detection processing 5.

[Drawing 27] drawing 27 is proper -- free medical treatment -- it is a flow chart explaining mode automatic selection processing.

[Drawing 28] drawing 28 -- each -- free medical treatment -- free medical treatment

with the mode -- it is drawing showing a sequence.

[Drawing 29] drawing 29 is proper -- free medical treatment -- it is a flow chart explaining the mode automatic selection processing 2.

[Drawing 30] drawing 30 -- free medical treatment -- it is a flow chart explaining the automatic post process 1 of operation.

[Drawing 31] drawing 31 -- free medical treatment -- it is a flow chart explaining the automatic post process 2 of operation.

[Drawing 32] Drawing 32 is drawing showing the outline configuration of the massage machine concerning the 2nd operation gestalt of this invention.

[Drawing 33] Drawing 33 is the perspective view showing the frame which supports a massage device.

[Drawing 34] Drawing 34 is drawing showing the outline configuration of the massage machine concerning the 3rd operation gestalt of this invention.

[Drawing 35] Drawing 35 is the block diagram showing the internal configuration of the massage machine concerning the 3rd operation gestalt.

[Drawing 36] Drawing 36 is drawing showing the outline configuration of the massage machine concerning the 4th operation gestalt of this invention.

[Drawing 37] Drawing 37 is the block diagram showing the outline of the internal configuration of the massage machine concerning the 4th operation gestalt of this invention.

[Drawing 38] Drawing 38 is drawing showing the outline configuration of the relaxation chair concerning the 5th operation gestalt of this invention.

[Drawing 39] Drawing 39 is the block diagram showing the internal configuration of the relaxation chair concerning the 5th operation gestalt.

[Drawing 40] The relaxation chair which drawing 40 requires for the 6th operation gestalt of this invention is drawing showing an outline configuration.

[Drawing 41] Drawing 41 is the block diagram showing the internal configuration of the relaxation chair concerning the 6th operation gestalt.

[Drawing 42] Drawing 42 is drawing showing the outline configuration of the relaxation chair concerning the 7th operation gestalt of this invention.

[Drawing 43] Drawing 43 is drawing showing the frame structure of the massage machine concerning the 8th operation gestalt of this invention, and a relaxation chair.

[Description of Notations]

1,101,201,301 Massage machine

401,501,601 Relaxation chair

86a, 86b, 86c, 86d, 86e, 86f Oscillating detection sensor

2 Back Board Section

3 Seat

4 Leg

7 Seat Frame

10 Leg Frame

13 Back Board Section Frame

14,102 Massage device

15 Back Frame

18,114 free medical treatment -- child

19,107 Main device section

20 Migration Device Section

21 22 Pulley

23 Belt

24,115 Driving source

25 Device Body Section

26,108 Rise-and-fall shaft

27,109 rubbing -- business -- shaft

27a Cam groove

28 29,110,111 Pinion

30,106 Rack

31 Free Medical Treatment -- Child Arm

32 Housing

33 Link Member

34 Free Medical Treatment -- Shaft for Child on-the-Strength Adjustment

35 41 Bearing

36 39 Rod

37 Bush

37a Boss

37b Pin

38 Arm

40 Shaft for Beats

41 Stopper

42 Spring

50 Transfer Device Hold Section

51 53 Standard

54 Clutch

61 CPU

65 ROM

66 RAM

68 Free Medical Treatment -- Child Mechanical Component

69 Free Medical Treatment -- Child Location Detecting Element

70 Oscillating Detecting Element

71 Information Section

72 Maine Drive Section

76 Vertical Drive Section

78 Free Medical Treatment -- **** Adjustment Device

80 Free Medical Treatment -- Child on-the-Strength Adjustment Device

103 Bed Frame

112 Support Saddle

113 Oscillating Absorption Section

202 Vibration Generator System

203 Independent Oscillating Generating Section

303,305,307,308 Vibrator

302 a-d, 304 a-d, 306 a-d, 308 a-d Fixed means

310 Vibrator Mechanical Component

402 Air Bag

403 Vibration Generator System

404 Relaxation Operation Section

502 Pump

503 Control Valve

504 Temperature Control Section

506 Heating Means

507 Cooling Means

508 Temperature Detection Means

801 Frame

802 Seat Frame

803 Susceptor Section

804 Oscillating Absorption Section

805 Arm

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